THE JOHNS HOPKINS UNIVERSITY

CONFERRING OF DEGREES

AT THE CLOSE OF THE

NINETY-THIRD ACADEMIC YEAR

JUNE 6, 1969

KEYSER QUADRANGLE

HOMEWOOD

BALTIMORE, MARYLAND

ORDER OF PROCESSION

THE GRADUATES

MARSHALS

John H. Badgley
John W. Gryder
John T. Guthrie
Owen Hannaway
Jon C. Liebman
Richard A. Macksey
Clara P. McMahon
Evangelos Moudrianakis
Everett L. Schiller
Henry M. Seidel
Charles R. Westgate

*

THE FACULTIES

MARSHALS

James Deese
John Walton

*

THE DEANS
THE VICE PRESIDENTS
THE TRUSTEES
AND HONORED GUESTS

MARSHALS

Alsoph H. Corwin
Ferdinand Hamburger

*

THE CHAPLAIN
THE PRESENTORS OF THE HONORARY DEGREE CANDIDATES
THE HONORARY DEGREE CANDIDATES
THE CHAIRMAN OF THE BOARD OF TRUSTEES
THE PRESIDENT OF THE UNIVERSITY

CHIEF MARSHAL

Carl F. Christ

*

The ushers are members of the Undergraduate Student Body.

ORDER OF EVENTS

LINCOLN GORDON
President of the University, presiding

* * *

PROCESSIONAL

"RIGAUDON"
Andre Campra

THE JOHNS HOPKINS BRASS CHOIR
under the direction of
Edward C. Wolf

The audience is requested to stand as the Academic Procession moves into the area and to remain standing until after the Invocation and the singing of the University Ode.

*

INVOCATION

CHESTER L. WICKWIRE
Chaplain of the University

*

THE STAR-SPANGLED BANNER
THE UNIVERSITY ODE

*

GREETINGS

ROBERT D. H. HARVEY
Chairman of the Board of Trustees

*

CONFERRING OF HONORARY DEGREES

Mrs. Frances Payne Bolton
Former Member of Congress from Ohio

Dr. Thomas R. S. Broughton
Paddison Professor of Classics
University of North Carolina

Dr. Harrison S. Brown
Professor of Geochemistry
California Institute of Technology

Mr. Charles S. Garland, Sr.
Trustee and Former Chairman of the Board of Trustees
The Johns Hopkins University

Dr. H. Keffer Hartline
Professor of Biophysics
The Rockefeller University

Dr. Martin D. Jenkins
President
Morgan State College

Dr. William B. Kouwenhoven
Professor Emeritus of Electrical Engineering
The Johns Hopkins University

Dr. Abel Wolman
Professor Emeritus of Sanitary Engineering
The Johns Hopkins University

Dr. Kingman Brewster, Jr.
President
Yale University

*

ADDRESS

Kingman Brewster, Jr.

*

CONFERRING OF DEGREES ON CANDIDATES

BACHELORS OF ARTS
BACHELORS OF ENGINEERING SCIENCE

Presented by

Allyn W. Kimball
Dean, Faculty of Arts and Sciences

* * *

CONFERRING OF DEGREES ON CANDIDATES
continued

BACHELORS OF SCIENCE
BACHELORS OF SCIENCE IN NURSING
BACHELORS OF SCIENCE IN ENGINEERING
MASTERS OF SCIENCE
MASTERS OF EDUCATION
MASTERS OF LIBERAL ARTS
CERTIFICATES OF ADVANCED STUDY IN EDUCATION

Presented by

RICHARD A. MUMMA
Dean, Evening College

* * *

MASTERS OF SCIENCE
DOCTORS OF SCIENCE
MASTERS OF PUBLIC HEALTH
DOCTORS OF PUBLIC HEALTH
DOCTORS OF PHILOSOPHY

Presented by

JOHN C. HUME
Dean, School of Hygiene and Public Health

* * *

MASTERS OF ARTS
DOCTORS OF PHILOSOPHY

Presented by

FRANCIS O. WILCOX
Dean, School of Advanced International Studies

* * *

DOCTORS OF MEDICINE
MASTERS OF ARTS
DOCTORS OF PHILOSOPHY

Presented by

DAVID E. ROGERS
Dean, School of Medicine

* * *

CONFERRING OF DEGREES ON CANDIDATES
continued

MASTERS OF SCIENCE IN ENGINEERING
MASTERS OF ARTS IN TEACHING
MASTERS OF ARTS
DOCTORS OF PHILOSOPHY

Presented by

ALLYN W. KIMBALL
Dean, Faculty of Arts and Sciences

* * *

REMARKS TO THE GRADUATES

LINCOLN GORDON
President of the University

*

BENEDICTION

*

RECESSIONAL

"FANFARE"

Dideric Buxtehude

The audience is requested to remain standing after the Benediction until the members of the faculties and graduates have left the area.

* * *

THE UNIVERSITY MACE

The University Mace carried by the Chief Marshal, Professor Carl F. Christ, was first used at the 1954 Commemoration Day Exercises. Eight symbols are hand wrought in sterling silver on an ebony staff. The symbols represent man's cultural development from ancient times, through the Middle Ages and the Renaissance, to the modern era.

THE PRESIDENTIAL INSIGNIA

University President Lincoln Gordon is wearing the Presidential Insignia signifying the authority vested in the President by the Board of Trustees. It is a chain of sterling silver links worn around the neck. Portraits of each of the nine Johns Hopkins University presidents are engraved on the faces of nine of the links. On the reverse are engraved the names and dates of office of each President. Eleven blank links for future use are included. The University Seal completes the design.

ACADEMIC DRESS

The custom of wearing academic dress stems from the Middle Ages, when scholars were also clerics and wore the costume of their monastic order. The hood was originally a cowl attached to the gown, which could be slipped over the head for warmth. The cap, originally round, later became the square mortar-board as we see it today.

Today the cap is the same for all American degrees, although the recipient of a doctoral degree is entitled to wear a gold tassel. The gown varies for the respective degrees. The Bachelor's gown is worn closed and can be distinguished by its long, pointed sleeves. The Master's gown is designed to be open with the arms worn through the slits in the elbows of the sleeves. The Doctor's gown, also worn open, has full, bell-shaped sleeves with three horizontal bars stitched across the upper arm. There is a velvet panel draped around the neck and stitched down the front edges. This velvet trimming may be either black or the same color as the velvet border of the hood.

The hood also varies for the respective degrees. The Bachelor's and Master's hoods are of the same design, pointed at the base. The Bachelor's hood is three feet long; the Master's hood is three and one half feet long. The Doctor's hood is four feet long, of fuller shape and rounded at the base.

The hood is bordered with velvet, the color of which indicates the field of study in which the degree was earned:

Dark blue — Philosophy
Light blue — Education
Orange — Engineering
Gold-yellow — Science
Green — Medicine
Salmon pink — Public Health
Pink — Music
Purple — Laws
White — Arts and Letters

The silk lining of the hood represents the institution which granted the degree. If more than one degree is held, the gown and hood of the higher or highest degree is worn. The Johns Hopkins University has adopted an alternative costume to be used by all holding Johns Hopkins doctoral degrees, both earned and honorary. The costume will consist of a gold robe with front and side panels in sable velvet and a six-sided, Dutch academic cap with gold sweatband and tassel. The linings seen in today's academic procession may include:

Black, old gold chevron — Johns Hopkins
Light blue, white chevron — Columbia
Dark blue — Yale
Blue with white chevron — Duke
Dark blue, two orange chevrons — Illinois
Light blue, two white chevrons — North Carolina
Old gold, maroon chevron — Minnesota
Old gold — Iowa
Gold, blue chevron — California
Gold — Virginia
Purple, gold chevron — Northwestern
Purple — New York University
Bright red — Wisconsin
Plum, with scarlet — London
Maroon — Chicago
Crimson — Harvard
Carnelian, two white chevrons — Cornell
Cardinal — Stanford
Red, tri-chevron in center — Heidelberg
Dandelion yellow — Michigan
Maize, azure blue chevron — Sorbonne
Yellow and white — Rochester

AWARDS

THE C. RICHARD MARTIN AWARD

in Political Economy for outstanding work by a first or second year graduate student

Awarded to:

FRANK R. FLATTERS

THE SARAH AND ADOLPH ROSEMAN ACHIEVEMENT AWARD

in Chemistry in recognition of outstanding accomplishment

Awarded to:

PROFESSOR WALTER S. KOSKI

THE JULIUS TURNER AWARD

for the best senior thesis in Political Science

Awarded to:

JAMES D. BERNSTEIN

THE DELTA SIGMA PI SCHOLARSHIP KEY

in the Division of Business of the Evening College for the highest average for the entire course

Awarded to:

HENRY BAILEY JOHNSON

PHI BETA KAPPA

Members Elected in 1969

Bruce Erroll Andrews
Richard Edward Bensinger
Marvin Theodore Berg
James Dana Bernstein
Michael Steven Borzy
Hayden Grant Braine
Charles Albert Braslow
Dalius J. Briedis
Robert Lee Buchanan
Edward James Busick, Jr.
Stephen John Carroll
Donn Alan Chambers
Robert Paul Churchill
Kevin Michael Clinton
Daniel Denegri
Anne Coleman Egbert
Merrill Jon Egorin
Akiva Mordecai Eisenberg
David H. Finley
Charles Wayne Francis
Sherwood Charles Frey
Gerhard Kurt Friesen
David Mercer Funk
Gary Philip Gottlieb
Robert Thomas Guza
David Richard Haburchak
John Martin Hartwick
James Barrett Jacobs
Marcia Jones King
Jason Harris Paperno Kravitt
Charles Herman Kuttner
Joseph Henry Langhirt
Benjamin Lee
David Bedford Lerberg
Gerald Eli Loeb
Michael Frederick Lubin
Anthony David Macro
Donald L. Magnetti
John Charles Malone
Michael Phillips Marcus
Karl George Mendenhall
Joseph Matthew Miller, Jr.
Philip Ira Moss
Sydney Harold Nathans
Stephen Lewis Nathanson
David Albert Norris
Gavril William Pasternak
John Sterner Philo
Joseph August Pika
Nelson Thomas Potter
Nilde Krieghoff Robertson
William John Rogers, Jr.
Wilton Turner Sanders III
William Denny Scharf
Malcolm M. Smith
Robert James Spence
Charles Leo Steinberg, Jr.
Frank Michael Torti
John Allen Trotter
Richard Allan Vogel
Douglas Jeffry Warsett
Daniel Roy Weinberger
Po-lung Yu
William Jerome Ziobro

TAU BETA PI

The following graduating seniors are members of The Tau Beta Pi Association—the National Engineering Honor Society.

Paul R. Beck
Michael F. Becker
John C. Catlin, Jr.
Brian L. Crissey
Edmund Freeman
Thomas E. Keast
Stephen J. Kiselwich
John J. Marini
Laurent B. Sidor
Joel A. Weiss
Dennis J. Gray

CITATIONS FOR HONORARY DEGREES

Citation Read by

DR. FRANCIS D. CARLSON

in Presenting

HALDAN KEFFER HARTLINE

for the Degree of Doctor of Laws

With this award the University honors one of its distinguished sons, a Nobel Laureate in Physiology, and a man with a deep appreciation of nature. His investigations of simple and complex visual systems led him to formulate the fundamental concepts and theoretical structure with which he deciphered some of the cryptic messages that travel from the eye to the brain. This remarkable achievement is far more than a tantalizing look at how the nervous system works. With it the darkness of perplexity that has shrouded the physiology of behavior has been lifted. His concepts, his analytical orientation, now known to be valid at higher integrative levels in the brain, are a cornerstone of modern neurophysiology.

Mr. President, it is for me a singular privilege to present to you for the honorary degree of Doctor of Laws, Haldan Keffer Hartline.

Citation Read by

DR. WALTER KOSKI

in Presenting

HARRISON SCOTT BROWN

for the Degree of Doctor of Laws

In awarding this degree, the University honors not only a distinguished scholar but also one of its own graduates and former faculty members. He has received a number of scientific awards and honorary degrees in recognition of his many contributions to science and the country. He recived his Ph. D. in chemistry from Johns Hopkins in 1941. He is a broad and versatile scholar, and a citizen of the world. His interests span subjects from chemistry and physics to problems of population explosion, disarmament and the future of mankind. He is Professor of Geochemistry and Professor of Science and Government at the California Institute of Technology, and he is also the Foreign Secretary of the National Academy of Sciences.

Mr. President, it is my privilege to present to you for the honorary degree of Doctor of Laws, Harrison Scott Brown.

Citation Read by

DEAN CARL SWANSON

in Presenting

MARTIN D. JENKINS

for the Degree of Doctor of Laws

Martin David Jenkins has been the President of Morgan State College since 1948. The continued growth, viability and visibility of this institution, attained during his years of stewardship, is testimony to his administrative skills. In the fields of psychology and education his scholarship has been equally impressive. The academic world is fully aware of these attainments and has honored him accordingly, but today The Johns Hopkins University honors Martin David Jenkins more as a humane and concerned individual than as a proven administrator and scholar, an individual who, through dedication and persistence, has given generously of his time and talents to the social betterment, improvement and educational opportunity and dignity of all young people. Through membership and activity on numerous boards and commissions, he has made his far-sighted philosophy felt on the local, regional and national scene, and under the auspices of the United States Department of State his views have been heard in the nations of Europe and Africa.

Mr. President, speaking for the students, faculty, administration and trustees of The Johns Hopkins University, we are honored to have this man join the Johns Hopkins community. I present Martin David Jenkins to you for the conferring of the degree of Doctor of Laws.

Citation Read by

DR. M. GORDON WOLMAN

in Presenting

ABEL WOLMAN

for the Degree of Doctor of Laws

Abel Wolman has devoted his life to the continuing search for ways of securing a healthy life for men everywhere. A teacher in any company, he combines wisdom and wit in bringing scholarship to statecraft. When many appear to despair of the present and to lose hope in the future, it is fitting that we honor a man who has struggled with the problems of society with enthusiasm, with faith in men, and with an optimism born not of ignorance, but of recognition of the slow-growing, yet tangible fruits of the democratic process.

Mr. President, it is my privilege to present to you for the honorary degree of Doctor of Laws, Abel Wolman.

Citation Read by

DR. GEORGE ZUIDEMA

in Presenting

WILLIAM BENNETT KOUWENHOVEN

for the Degree of Doctor of Medicine

In awarding this degree, the University offers its unique recognition of a man who has served her faithfully for more than half a century. William Bennett Kouwenhoven joined our faculty in 1914, and in the intervening years has enjoyed two full and rewarding careers. His first contributions were in Electrical Engineering, where he distinguished himself as investigator, teacher, departmental chairman and Dean. His retirement to Emeritus status in 1954 merely permitted him to devote his full energies to his second career, pioneering the discipline of Biomedical Engineering. He has made many contributions to science and society, and has received many honors in acknowledgement of his lifetime of service. His studies of the effects of electricity on the human body led to a complete change in cardiopulmonary resuscitation. This stands as one of the most significant discoveries in medical science of this century.

All of us have been enriched by our association with this man. He has brought distinction to this University, and inspiration to our students and faculty. It is only fitting that we recognize his services to science and mankind by honoring him in this special way.

Mr. President, I take pleasure in presenting William Bennett Kouwenhoven for the honorary degree of Doctor of Medicine.

Citation Read by

DR. FRANCIS E. ROURKE

in Presenting

KINGMAN BREWSTER

for the Degree of Doctor of Laws

Historians tell us that institutions as well as societies reach a high stage of development by meeting and overcoming challenges with which they are confronted. If level of challenge thus determines achievement, then higher education stands today on the brink of a renaissance the like of which the world has never seen.

As a university president, the candidate we honor today has led the way in a creative response to the need for change. Under his leadership, Yale is no longer a monochromatic Old Blue institution. It includes voices from all sectors of society and this fall the glee club will for the first time have its own soprano section, as girls as well as boys join the freshman class. In this as in other ways, our candidate has demonstrated that an institution of higher education can use a time of troubles to find a new vitality, by seizing opportunities that would never be open in a more tranquil environment.

Mr. President, it is my privilege to present to you for the honorary degree of Doctor of Laws, the President of Yale University, Kingman Brewster.

Citation Read by

DR. WILLIAM BEVAN

in Presenting

CHARLES S. GARLAND, SR.

for the Degree of Doctor of Laws

Mr. President I have the honor to present to you for the degree of Doctor of Laws, Charles Stedman Garland, distinguished resident of this city, respected leader in the nation's financial community, and devoted Chairman of the Board of Trustees of this University for a decade.

Seldom in the history of any University has one Trustee exercised so much positive influence on its growth and development as Charles Garland has at Johns Hopkins. With wisdom gained at Yale and honed in the halls of business and finance; with vigor developed in his days as a world tennis champion; and with uncommon interest in higher education nurtured through his affection for Johns Hopkins, Charles Garland will be remembered for the major role he played in bringing this University to new and higher levels of distinction in academe and in the world beyond the campus.

His leadership was largely anonymous for many. But those of us who have been privileged to know him well are at once struck by his incisive mind, his friendly manner, and the grace with which he conducted all of his tasks.

Mr. President it is especially fitting, on this day when we honor another gentleman from New Haven, that we recognize one of Yale's most remarkable alumni—Charles Stedman Garland.

Citation Read by

DEAN FRANCIS O. WILCOX

in Presenting

FRANCES P. BOLTON

for the Degree of Doctor of Laws

Distinguished legislator, dedicated internationalist, and wise and generous philanthropist, Frances P. Bolton represents the best in American life. For nearly three decades she served as a member of the House of Representatives' Committee on Foreign Affairs.

We at Johns Hopkins have a particular reason to honor Mrs. Bolton. As one of the founders of the School of Advanced International Studies and a member of its Advisory Council, she has served the School with loyalty and wisdom for 25 years.

We recognize Frances Bolton today for all of these achievements, but above all we honor her as a person of courage, devotion, human understanding and integrity who has won the admiration and affection of the many in all walks of life who have had the good fortune to know her.

Mr. President, it is a great personal privilege to present to you for the honorary degree of Doctor of Laws, the Honorable Frances P. Bolton.

Citation Read by

DR. DON C. ALLEN

in Presenting

THOMAS ROBERT SHANNON BROUGHTON

for the Degree of Doctor of Laws

Thomas Robert Shannon Broughton came to Baltimore from Toronto to take his doctorate with the celebrated classicist, Tenney Frank. After teaching at Bryn Mawr, where he wrote his monumental volumes on *The Magistrates of the Roman Republic*, he went to the University of North Carolina as Paddison Professor of Classics. His writings have preserved and enhanced the serious tradition of scholarship inaugurated on this continent by The Johns Hopkins University; but, better still, his character has exemplified the observation of the most renowned of Roman magistrates, Marcus Tullius Cicero, that " these studies nourish our youth, make pleasant our old age, are ornaments in prosperity, and a refuge in misfortune."

Mr. President, it is my privilege to present to you for the honorary degree of Doctor of Laws, Thomas Robert Shannon Broughton.

Graduating with Departmental Honors in Arts and Sciences and Engineering Science

Michael Anthony Aurelia III
James Dana Bernstein
William Sadler Bonds
Terry Roland Chambers
Howard Allen Chernick
Paul H. Chutkow
Howard Lee Cohen
Philip Ira Cohen
Brian Laird Crissey
Akiva Mordecai Eisenberg
William David Ellis
John Michael Fidler
David B. Fishman
William Averill Frazier III
Lewis Edward Frisch
Kirk Elliott Fry
Paul Thomas Giblin
Dennis John Gray
Robert Thomas Guza
Howard George Katz
Thomas Edwin Keast
Stephen Joseph Kiselewich
Jason Harris Paperno Kravitt
Joel Lamon
Benjamin Lee
David Keith Lee
Robert Murray Lipschutz
Michael Frederick Lubin
Gerald Scott Lutes
Michael David Manson
John Joseph Marini
Karl George Mendenhall
John Harold Mensinger
Clarke Francis Millette
Philip Ira Moss
John Sterner Philo
Daniel Jay Rose
Wilton Turner Sanders III
Joel Alexander Weiss

Graduating with General Honors in Arts and Sciences and Engineering Science

Richard Alan Banjavic
Gregory Duncan Beall
Michael Franklin Becker
Marvin Theodore Berg
James Dana Bernstein
James Robert Birge
David Jon Boehlke
William Sadler Bonds
Michael Steven Borzy
Charles Albert Braslow
Dalius J. Briedis
Avery Michael Brown
Edward James Busick
Alan Terri Cariski
John Carey Catlin
Donn Alan Chambers
Robert Paul Churchill
Philip Ira Cohen
David Stephen Cooper
Brian Laird Crissey
John Edmund Devine
Barry Jay Dockswell
Robert Gene Doll
Paul Raymond Dorn
Anne Coleman Egbert
Merrill Jon Egorin
William David Ellis
Akiva Mordecai Eisenberg
David H. Finley
David B. Fishman
Charles Wayne Francis
Frederic B. Francke
William Averill Frazier III
Edmund Freeman
Lewis Edward Frisch
David Mercer Funk
Gary Philip Gottlieb
Dennis John Gray
Elmer Kenneth Grove
Robert Thomas Guza
David Richard Haburchak
Eric Liebling Herzog
James Merkin Hirschhorn
Susan Margaret Ice
James Barrett Jacobs
Howard George Katz
Thomas Edwin Keast
Stephen Joseph Kiselewich
Howard Robert Kramer
Jason Harris Paperno Kravitt
Charles Herman Kuttner
Joseph Henry Langhirt
David Keith Lee
John Charles Lintilicum
Robert Murray Lipschutz
Gerald Eli Loeb

Michael Frederick Lubin
Gerald Scott Lutes
Michael Phillips Marcus
John Joseph Marini
Karl George Mendenhall
John Harold Mensinger
Joseph Matthew Miller, Jr.
Philip Ira Moss
William Sebouh Nersesian
David Albert Norris
Gavril William Pasternak
John Sterner Philo
Daniel Jay Rose
Robert Steven Rudenstein
Wilton Turner Sanders III
William Denny Scharf
Daniel Adam Sherman
Laurent Bernard Sidor
Frederick Siems
James Carlton Sloan
Robert James Spence
Charles Leo Steinberg, Jr.
James David Stevenson
Frank Michael Torti
John Allen Trotter
David Carl Verner
Richard Allan Vogel
Peter Warschawski
Douglas Jeffrey Warsett
Joseph Arnold Weinberg
Daniel Roy Weinberger
Joel Alexander Weiss
James Charles Weissman
David M. Wirtz
Baron Chesley Wormser
Jeffrey Lawrence Zweig

Graduating with Honors in the Evening College

Charles Perry Andrews, Jr.
Edgar Reuben Bare
Linda Ebert Batt
William Adam Bauer
Harold Richard Bittner
James Leo Boyle
Jerome Paul Bukovski, Jr.
Miriam Burke
Thurman Orien Butcher
Stephen John Clancy
Nancy Van Westen Cox
Alan Bruce Crane
Nancy Ingalls Crossfield
Sylvia Smeyne Davis
Patricia Anne Dorsey
Brenda Saltzman Ellner
Daisy Powell Ewell
Marshall Leigh Fallwell
Stanley Favin
Lita Phillips Fay
Frank Feiulle IV
Lewis Preston Fisher
Frank Lawrence Friedman
Stephen Allen Gary
Gordon Edward Goetz
Joshua Honigwax
Robbye Barrow Horowicz
Henry Bailey Johnson
Robert Kenneth Jones
Charles Gerard Kendzierski
Stephen Lewis Kossman
Dalton Creed Lane
Elizabeth Ellen Legum
Charlotte Silberstein Lichtenberg
Richard John Link
Esther Shulman Love
Robert Clark Moore
William Curran Mules
Eileen B. Offit
Sandra Elizabeth Orem
William Marshall Paul
Charlotte Bushnell Pecelli
Philip Rudisill Peeling
Max Roderic Peterson
Robert Joseph Pierce
David Hahn Poist
David Charles Poulin
Mary Clare Powell
Frederick William Power
Gloria Forshlager Pruce
William Arthur Randall
Richard Royle Reamy
Henrietta Bainbridge Robbins
Jerry Silhan
Marguerite Eleanor Thompson
Stanley Floyd Trainer
Helen Catherine Feust Wenzel
Daniel Joseph Werner
John Arthur White
Anthony Andrew Wodarczyk
Elwood Eugene Zimmerman

CANDIDATES FOR DEGREES

As of June 2, 1969

BACHELORS OF ARTS

David Stephen Rodler Abrahamson, of Martha's Vineyard, Mass.
Michael Albert Abrams II, of Baltimore, Md.
Michael L. Adler, of Wilmette, Ill.
Karl Matthew Ahrendt, of Baltimore, Md.
William John Althaus, of York, Pa.
James Walter Althouse III, of Gwynedd Valley, Pa.
Michael Barton Amey, of Doylestown, Pa.
Robert John Ancona, of Detroit, Mich.
William Paul Andersen, of Woodland, Calif.
Thomas Hollingsworth Andrews II, of Millburn, N. J.
Steven A. Asher, of Melrose Park, Pa.
Michael Anthony Aurelia III, of Stratford, Conn.
Neil Harrison Bander, of Chestnut Hill, Mass.
Richard Alan Banjavic, of Maywood, Ill.
James Peterson Barber, of Dayton, Ohio
David William Barrett, of Alexandria, Va.
Gregory Duncan Beall, of Richfield, Minn.
David Albert Bennett, of Norfolk, Va.
James Gordon Bennett, of Natick, Mass.
David Michael Benson, of Baltimore, Md.
Peter John Benson, of District Heights, Md.
William Lawrence Benzon, of Johnstown, Pa.
Michael Berenson, of Washington, D. C.
Marvin Theodore Berg, of Manhasset Hills, N. Y.
James Dana Bernstein, of Harrison, N. Y.
James Robert Birge, of Wauwatosa, Wis.
Paul Leonard Black, of Hollywood, Fla.
Karen Leigh Blanchard, of Humble, Texas
David Lawrence Blecker, of Milwaukee, Wis.
Michael Alan Blieden, of Indianapolis, Ind.
Donald Victor Bobrow, of Brooklyn, N. Y.
David Jon Boehlke, of Eau Claire, Wis.
Kenneth Walter Bond, of Eugene, Ore.
William Sadler Bonds, of Richmond, Va.
Kenneth A. Borig, of Baltimore, Md.
Daniel Howard Borinsky, of Baltimore, Md.
Michael Steven Borzy, of Cleveland, Ohio
Dennis Leon Bouffard, of Waterbury, Conn.
James Simons Boyce, of Baltimore, Md.
Lenoir Ben Bradford, Jr., of Washington, D. C.
David Ezra Brainerd III, of Glen Ellyn, Ill.
Charles Albert Braslow, of Newport News, Va.
Alan Mickey Breschkin, of Baltimore, Md.
Karl Johann Breyer, of Scarsdale, N. Y.
Dalius J. Briedis, of Richmond Hill, N. Y.
Sheldon Frank Brill, of Baltimore, Md.
Avery Michael Brown, of Baltimore, Md.
Peter Evans Brownback III, of Arlington, Va.
Robert Bruce Brundrett, of Baltimore, Md.
Philip Lamb Buck, of Baltimore, Md.
Noel Charles Burnham, of Troy, Mich.
John Robert Burns, of Hanover, N. J.
Edward James Busick, Jr., of Franklin Square, N. Y.
Thomas Ambrose Cadogan, Jr., of Baltimore, Md.
John Joseph Cardillo, of Manhasset, N. Y.
Robert William Carey, Jr., of Frederick, Md.
Alan Terri Cariski, of Silver Spring, Md.
Robert McKay Carlin, of Baltimore, Md.
Paul William Carlson, of Lanham, Md.
Craig Lee Carson, of Colorado Springs, Colo.
Ingrid Augusta Andersen Castronovo, of Short Hills, N. J.
Donn Alan Chambers, of Atlanta, Ga.
Terry Roland Chambers, of Baltimore, Md.
Howard Allen Chernick, of Metuchen, N. J.
Stefan Chipowsky, Jr., of Baltimore, Md.
Forrest Glen Chumley, of Dundalk, Md.
Robert Paul Churchill, of Falls Church, Va.
Paul H. Chutkow, of Highland Park, Ill.
Michael Allen Clark, of Annapolis, Md.
Graeme Robertson Clarke, of Baltimore, Md.
Harvey Steven Cohen, of Baltimore, Md.
Howard Lee Cohen, of Baltimore, Md.
Philip Ira Cohen, of Baltimore, Md.
John Christopher Coleman, of Baltimore, Md.
Robert Richard Comiskey, of Huntington, N. Y.
Joe Fisher Compton, of Severna Park, Md.
Gary Jay Conaway, of Winfield, Md.
John Joseph Conway, of Fairfield, Conn.
Byron Stanley Cooper, of Chevy Chase, Md.
David Stephen Cooper, of Teaneck, N. J.
Jeffrey Richard Cooper, of Arlington, Va.
Joseph William Cowan, of Baltimore, Md.
Joel Crawford, of Suffern, N. Y.
Thomas Rankin Crock, of Greensburg, Pa.
Mark Clyde Croft, of Adelphi, Md.
Robert Edward Crutchley, Jr., of Arnold, Md.
Granville Yocum Custer III, of Chevy Chase, Md.
Lawrence Robert Daniels, of West Haven, Conn.
Gene A. Detroyer, of Fair Lawn, N. J.

John Edmund Devine, of Ocean City, N. J.
Robert Arnold Deyo, of Oxford, Md.
Michael Jacques Diament, of Germantown, Tenn.
Jonathan Robert Diamond, of Stamford, Conn.
Stephen Ronald Diamond, of Silver Spring, Md.
Daniel Bruce Diner, of Rockville Centre, N. Y.
Joseph Vincent DiRago, Jr., of Woburn, Mass.
Barry Jay Dockswell, of Jericho, N. Y.
Robert Gene Doll, of La Mesa, Calif.
Peter Allison Doob, of Melville, N. Y.
Paul Raymond Dorn, of Baltimore, Md.
Richard Arthur Dryden, of Salisbury, Md.
James Hamilton Easter, Jr., of Highland, Md.
Anne Coleman Egbert, of Baltimore, Md.
Merrill Jon Egorin, of Baltimore, Md.
Kenneth Ellis Ehrlich, of St. Louis, Mo.
Akiva Mordecai Eisenberg, of Chicago, Ill.
William David Ellis, of Baltimore, Md.
Kenneth Ira Epstein, of Pittsburgh, Pa.
Dennis Arnold Estis, of Union City, N. J.
Gregory Wayne Evans, of Scottsdale, Ariz.
Bruce Michael Fagin, of Port Chester, N. Y.
Gary Lloyd Falk, of District Heights, Md.
James Lawrence Feely, Jr., of Manhasset, N. Y.
Robert Lee Feick, of Baltimore, Md.
Joseph Allen Feld, of Baltimore, Md.
Peter Fleming Ferson, of Pittsburgh, Pa.
John Michael Fidler, of Baltimore, Md.
David H. Finley, of Scarsdale, N. Y.
David B. Fishman, of Bronxville, N. Y.
Max Bernard Flaxman, of Baltimore, Md.
Charles Wayne Francis, of Belmont, N. Y.
Samuel Todd Francis, of Chattanooga, Tenn.
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Richard Spencer Frary, Jr., of Burnsville, Minn.
William Averill Frazier III, of Rising Sun, Md.
Carl Peter Fredland, of Annapolis, Md.
Robert James Friedman, of Hillsdale, N. J.
Guy Norman Fringer, of Westminster, Md.
Lewis Edward Frisch, of New York, N. Y.
Kirk Elliott Fry, of Cedar Falls, Iowa
David Mercer Funk, of Baltimore, Md.
Frederick Charles Gaede, of Baltimore, Md.
David John Galbraith, of McDonald, Pa.
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John Richard Garrett, of Carnegie, Pa.
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Benjamin Richard Gelber, of Scotia, N. Y.
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Paul Thomas Giblin, of Huntington, N. Y.
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Alfred Joseph Goldberg, of Scarsdale, N. Y.
Larry Bennet Goldsmith, of Baltimore, Md.
Charles Padgett Goodell, Jr., of Severna Park, Md.
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Richard Michael Grayson, of Roslyn, N. Y.
Elmer Kenneth Grove, of Baltimore, Md.
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Robert Thomas Guza, of Philadelphia, Pa.
Peter Gordon Haas, of Glen Ellyn, Ill.
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Philip Lee Hage, of Hartsdale, N. Y.
John Henry Hanson, of Akron, Ohio
William Charles Harlow, of Holyoke, Mass.
Thomas Sarafen Harris, of Watertown, N. Y.
Frank Martin Harron, of Baltimore, Md.
Allan Louis Haynes, Jr., of Clovis, N. M.
Jonathan Peter Hecht, of South Orange, N. J.
Jeffrey Alan Heldt, of Dearborn, Mich.
Bruce Lawrence Heller, of Scarsdale, N. Y.
Eric Liebling Herzog, of White Plains, N. Y.
Israel Jackson Herzog, of Plainfield, N. J.
Peter Robert Hewitt, of Moylan, Pa.
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James Merkin Hirschhorn, of Baltimore, Md.
Richard Alan Hochman, of Arlington, Va.
Earl Leslie Hoffman, of Baltimore, Md.
Michael Charles Hoffman, of Teaneck, N. J.
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Geoffrey Radford Hope, of Bloomington, Ind.
Thomas Allan Horne, of Haverford, Pa.
William Vance Hughes, of Muncie, Ind.
James Thomas Husted, of Baltimore, Md.
Susan Margaret Ice, of West Lawn, Pa.
Monte Earl Ikemire, of Tulsa, Okla.
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James Barrett Jacobs, of Mt. Vernon, N. Y.
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Thomas Anthony Kaleita, of Sharon, Pa.
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Howard George Katz, of Irvington, N. J.
Allan Kaufman, of Randallstown, Md.

Thomas Jay Kaufman, of Lexington, Ky.
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Richard Lee Kessinger, of Yakima, Wash.
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H. Robert Kramer, of Massapequa, N. Y.
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Michael Jay Kurland, of Baltimore, Md.
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Joel Lamon, of San Diego, Calif.
Paul Landsberg, of New York, N. Y.
Joseph Henry Langhirt, of Baltimore, Md.
Lanny Michael Laughman, of Hanover, Pa.
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Richard Young LeCompte, of Plainfield, N. J.
Benjamin Lee, of Scarsdale, N. Y.
David Keith Lee, of Lead, S. D.
Philip John Lemkau, of Towson, Md.
John Armstrong Leppman, of Moorestown, N. J.
Alan Jerome Levene, of Louisville, Ky.
Evert Pieter Light, of Darien, Conn.
John Charles Linthicum, of Linthicum, Md.
Robert Murray Lipschutz, of Philadelphia, Pa.
William Barry Lloyd, of Sweetwater, Tenn.
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Gerald Eli Loeb, of Manville, N. J.
James Iver Lowenstein, of Newark, N. J.
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Gary Zane Nothstein, of Lehighton, Pa.
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Peter Warschawski, of Basel, Switzerland
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Thomas Edward Wex, of Oconomowoc, Wis.
Timothy George Wex, of Oconomowoc, Wis.
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Richard Philip Wilson, of Severna Park, Md.
Ricord Burton Winstead, of Ancon, Canal Zone
David M. Wirtz, of Kalamazoo, Mich.
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Baron Chesley Wormser, of Baltimore, Md.
Wade Howard Wright, of Eau Gallie, Fla.
James Steven Wulach, of South Orange, N. J.
Don Harris Yablonowitz, of Manhasset Hills, N. Y.
William Floyd Younkin, of Indian Harbour Beach, Fla.
James Herman Zuger, of Kansas City, Kan.
Jeffrey Lawrence Zweig, of Santa Ana, Calif.

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Michael Franklin Becker, of Cheverly, Md.
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Richard Douglas Bosse, of Stamford, Conn.
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William David Filler, of Towson, Md.
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Gregory Joseph Franzoni, of Baltimore, Md.
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Lawrence Gordon Lesniak, of Baltimore, Md.
Dana Martin Lowry, of Shaker Heights, Ohio
Gerald Scott Lutes, of Baltimore, Md.
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Joel Alexander Weiss, of Silver Spring, Md.
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BACHELORS OF SCIENCE

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Harry Allen Franks, of Baltimore, Md.
Heningham Lyons Fulton George, of Baltimore, Md.
Gordon Edward Goetz, Jr., of Baltimore, Md.
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Napoleon B. Head, Jr., of Baltimore, Md.
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Frederick Emil Hylla, of Baltimore, Md.
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Walter Leonard Kahler, of Baltimore, Md.
Robert Joseph Keenan, of Beltsville, Md.
Charles Gerard Kendzierski, of Baltimore, Md.

Robert Duane Kennard, of Newark, Del.
Lois Thayer King, of Baltimore, Md.
Leeda Kiprow, of Baltimore, Md.
Selina Gold Korman, of Baltimore, Md.
Stephen Lewis Kossman, of Baltimore, Md.
George Anthony Kurisky, of Lutherville, Md.
John Anthony Kwedar, of Baltimore, Md.
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Elizabeth Ellen Legum, of Baltimore, Md.
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Zalel Ostrow, of Baltimore, Md.
John Howard Paul, of Baltimore, Md.
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Edward Nicholas Piccoli, of Baltimore, Md.
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Rafael Rios, of Baltimore, Md.
Francis Irwin Ritgert, of Baltimore, Md.
Frank Mahlon Robey, of Baltimore, Md.
Joel William Rovins, of Randallstown, Md.
Herbert Rudo, of Baltimore, Md.
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Robert John Schneider, of Poplar Springs, Md.
Rosemary Ellis Scholtz, of Baltimore, Md.
Katharine Louise Seiler, of Baltimore, Md.
William Andrew Sewell, Jr., of Baltimore, Md.
Margery Zink Shriver, of Baltimore, Md.
Douglas Harry Silverman, of Baltimore, Md.
Vincent Edmund Simonton, of Baltimore, Md.
Donna Arlene Snyder, of Baltimore, Md.
Richard Humphrey Snyder, of Cockeysville, Md.
Mercedes Stevens, of Baltimore, Md.
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Edward Vincent Stover, Jr., of Baltimore, Md.
Anthony Francis Strucko, of Baltimore, Md.
John J. Strumsky, Jr., of Baltimore, Md.
John Carlton Swain, of Baltimore, Md.
Alan Lester Taragin, of Baltimore, Md.
Allen M. Vanneman, Jr., of Baltimore, Md.
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Bernard William Walker, of Baltimore, Md.
Bonnie Hansen Warfield, of Reisterstown, Md.
William Roche Waters, of Baltimore, Md.
Sarah IdaJane Weida, of Baltimore, Md.
John Glenn White, Jr., of Baltimore, Md.
Rifkah Lebovic Zweig, of Baltimore, Md.

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BACHELORS OF SCIENCE IN NURSING

Mary Mercedes Baker, of Rockville, Md.
Suzanne Gabrielle de Poix, of Arlington, Va.
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Virginia Park Milliron, of Baltimore, Md.
Janice Eleanor Rieve, of Baltimore, Md.
Barbara E. Zander, of Newark, Del.

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BACHELORS OF SCIENCE IN ENGINEERING

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Carlos Svend Schultz, of Reisterstown, Md.
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Jerry Silhan, of Baltimore, Md.
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Walter Herman Stallings, of Baltimore, Md.
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Stanley Floyd Trainer, of Reisterstown, Md.
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Joseph Vincent Waitkus, of Baltimore, Md.
Warren Harris Ware, of Baltimore, Md.
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Patrick Read Wheeler, of Glen Burnie, Md.
Richard Allen Wilkinson, of Lutherville, Md.
Frederick Charles Williams, of Baltimore, Md.
Donald Earl Wineberg, of Baltimore, Md.
Charles W. Wingfield, of Baltimore, Md.
Anthony Andrew Wodarczyk, of Baltimore, Md.
Paul Edwin Wright, of Owings Mills, Md.
Neil Edward Young, of Cockeysville, Md.

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MASTER OF SCIENCE IN ENGINEERING

in the Evening College

with title of essay

Charles Clifford Kilgus, of Ellicott City, Md., B. S. E. E. Drexel Institute of Technology, 1964. Electrical Engineering.

The Transmission-Line Directional Coupler.

(1)

MASTERS OF SCIENCE

in the Evening College

with titles of essays

William Walter Archinal, of Springfield, Va., B. S. E. E. Tri-State College, 1961. Management Science.

Howard Allen Austin, of Riverdale, Md., B. S. Concord College, 1966. Numerical Science.

Raymond Otto Bagley, Jr., of Fallston, Md., B. S. in M. E. University of Massachusetts, 1955; M. S. in Nuclear Engineering Massachusetts Institute of Technology, 1957. Management Science.

Alan Robertson Ballman, of Baltimore, Md., B. S. E. The Johns Hopkins University, 1964. Management Science.

Donald Henry Berlau, of Baltimore, Md., B. S. The Johns Hopkins University, 1966. Management Science.

Robert Allan Blankenbiller, of Bel Air, Md., B. S. Albright College, 1958; B. S. (Aero Engr.) Penn. State University, 1958.

James Leo Boyle, of New Carrollton, Md., B. A. Lebanon Valley College, 1963. Numerical Science.

Charles Rodney Brown, of Silver Spring, Md., B. S. State Teachers College, Mansfield, Pa.; 1950. Numerical Science.

Bruce Bundsen, of Greenbelt, Md., B. S. in Appl. Math. Georgia Institute of Technology, 1959; M. S. in Appl. Math., 1961. Management Science.

Glenn Wilson Burow, of Greenbelt, Md., M. A. Duquesne University, 1966. Numerical Science.

John William Caron, of College Park, Md., B. S. Lowell Technological Institute, 1963; M. S. Northeastern University, 1965. Management Science.

Paul Gilbert Casner, Jr., of Savage, Md., B. S. E. E. Drexel Institute of Technology, 1963. Management Science.

Kenneth Lee Caspari, of Lanham, Md., B. S. in E. E. Texas Technical College, 1961. Electrical Engineering.

Charles Wellington Chapoton, Jr., of Baltimore, Md., B. S. E. E. Louisiana State University, 1960. Management Science.

Robert Joseph Chrobocinski, of Silver Spring, Md., B. S. Drexel Institute of Technology, 1966. Numerical Science.

Connie Tenley Coleman, of Baltimore, Md., B. A. Hood College, 1962. Management Science.

Edward Cortez, of Rockville, Md., B. S. E. E. Texas Technological College, 1961. Electrical Engineering.

Thomas Michael Corwin, of Port Deposit, Md., B. S. Tulane University, 1964. Physics.

Angular Distribution and Angular Correlations in the Reactions B^{11} (d, n) C^{12**} (γ) C^{12*} (α) Be^{8} (α) He^{4} Involving the 15.11 and 10.84 Mev States of Carbon-12.

Alan Bruce Crane, of Beltsville, Md., B. S. Southwest Missouri State College, 1964. Numerical Science.

Roy Edward Crippen, Jr., of Laurel, Md., B. S. The Citadel, 1956. Management Science.

Miguel Valentino Cruz, of Silver Spring, Md., B. S. E.E. Virginia Polytechnic Institute, 1963. Numerical Science.

Bruce John DeGrasse, of Silver Spring, Md., B. S. University of Minnesota, 1958. Numerical Science.

Barbara Ann Dodge, of Washington, D. C., B. S. The George Washington University, 1960. Numerical Science.

James Philip Ehrman, of Baltimore, Md., B. S. E. E. University of Notre Dame, 1961; M. S. E. E., 1963. Management Science.

Harvey Irving Eisenberg, of Beltsville, Md., A. B. Brooklyn College, 1951. Management Science.

Donald Gene Evans, of Severna Park, Md., B. S. E. The Johns Hopkins University, 1964. Electrical Engineering.

Daisy Walston Ewell, of Baltimore, Md., A. B. Duke University, 1966. Numerical Science.

Robert Thomas Eynon, of Baltimore, Md., B. E. E. Villanova University, 1964; M. S. E. E. Purdue University, 1965. Management Science.

Stanley Favin, of Silver Spring, Md., B. S. The George Washington University, 1961. Numerical Science.

John Joseph Fino, of Baltimore, Md., B. E. The Johns Hopkins University, 1952. Electrical Engineering.

Robert Bruce Fisher III, of Baltimore, Md., B. E. S. The Johns Hopkins University, 1965. Management Science.

Frank Lawrence Friedman, of Baltimore, Md., B. A. Antioch College, 1965. Numerical Science.

Phillip Barrie Friedrichs, of Millersville, Md., B. S. United States Naval Academy, 1954; M. S. in Engr. Electronics United States Navy Postgraduate School, 1962. Management Science.

John Vernon Galloway, of Timonium, Md., B. E. S. The Johns Hopkins University, 1957. Electrical Engineering.

Robert Augustine Gardenghi, of Baltimore, Md., B. S. E. E. Drexel Institute of Technology, 1960. Management Science.

Stephen Allen Gary, of Silver Spring, Md., B. E. E. Cornell University, 1964. Electrical Engineering.

Richard Sidney Goncher, of Laurel, Md., B. S. Brooklyn College, 1966. Numerical Science.

William Elmer Grimsley, Jr., of South Charleston, W. Va., B. S. West Virginia Institute of Technology, 1965. Numerical Science.

Sylvan Hack, of Baltimore, Md., B. S. in Bus. The Johns Hopkins University, 1948; M. S. (Management Science), 1965. Numerical Science.

Randolph Adolphus Harding, Jr., of Baltimore, Md., B. S. University of Maryland, 1943. Management Science.

James Albert Harle, of Annapolis, Md., B. S. Drexel Institute of Technology, 1966. Numerical Science.

Barbara Snyder Hawkins, of Baltimore, Md., B. S. North Carolina State College, 1962. Numerical Science.

Kenneth Wayne Hennigan, of Glen Burnie, Md., B. S. University of Tulsa, 1964. Management Science.

Robert Lee Herring, of Greensboro, N. C., B. E. The Johns Hopkins University, 1953. Management Science.

Phillip McClanahan Hopkins, of Glen Burnie, Md., B. S. Tri-State College, 1965. Electrical Engineering.

Ramachandra Rajagopalan Iyer, of Hyattsville, Md., B. Tech. Indian Institute of Technology, 1964; M. S. University of California, Berkeley, 1966. Management Science.

William Henry Kelsey, of Baltimore, Md., B. S. University of Maryland, 1964. Management Science.

Steven Klein, of Arlington, Va., B. S. Queens College, 1963. Numerical Science.

Dalton Creed Lane, of Silver Spring, Md., A. B. Berea College, 1947. Numerical Science.

Ray Eldon Lee, of Linthicum Heights, Md., A. B. Wabash College, 1939. Management Science.

Virgil Dennis Lewis, of Beltsville, Md., B. S. University of Colorado, 1965. Numerical Science.

John Joseph Marley, of Aberdeen, Md., B. S. E. E. Pennsylvania State University, 1960. Electrical Engineering.

Gerald Cardwell Martin, of Beltsville, Md., B. S. Stevens Institute of Technology, 1963. Electrical Engineering.

Fred Louis Mauser, of Laurel, Md., A. B. St. Mary's College, 1962. Numerical Science.

Peter Leverich McCammon, of Annapolis, Md., B. S. United States Naval Academy, 1962; B. S. E. E. United States Naval Postgraduate School, 1967. Electrical Engineering.

Ernest Theodore Messersmith, Jr., of Sykesville, Md., B. S. E. The Johns Hopkins University, 1965. Management Science.

Robert Clark Moore, of Silver Spring, Md., B. S. E. E. Lafayette College, 1965. Electrical Engineering.

John Albert Morgan, of Lutherville, Md., B. S. E. The Johns Hopkins University, 1963. Management Science.

Tirunilakuddi K. Natarajan, of Baltimore, Md., B. S. E. The Johns Hopkins University, 1963. Electrical Engineering.

Anne Marie Norton, of Cambridge, Mass., A. B. Emmanuel College, 1966. Numerical Science.

Bruce Kjellgren Opitz, of Alexandria, Va., B. S. New York University, 1967. Numerical Science.

Chandrakant Bhulabhai Patel, of Baltimore, Md., M. S. Stanford University, 1966. Management Science.

William Jasper Peters III, of Annandale, Va., B. S. United States Naval Academy, 1958. Numerical Science.

Max Roderic Peterson, of Beltsville, Md., B. S. E. Kansas State University, 1961. Electrical Engineering.

Donna Marie Popham, of Laurel, Md., B. S. in Math. Marygrove College, 1964. Numerical Science.

David Charles Poulin, of Silver Spring, Md., B. A. University of Maine, 1966. Numerical Science.

Frederick William Power, of Laurel, Md., B. A. University of Colorado, 1961. Numerical Science.

Phillip Lee Randolph, of Hyattsville, Md., B. S. E. E. Arlington State College, 1965. Numerical Science.

Martin Lawrence Rosman, of Baltimore, Md., B. E. E. City College of New York, 1963. Electrical Engineering.

Herbert Barry Scher, of Baltimore, Md., B. S. E. E. Polytechnic Institute of Brooklyn, 1960. Management Science.

Norman Benjamin Schwartz, of Bala Cynwyd, Pa., B. S. in Met. E. Drexel Institute of Technology, 1963. Management Science.

Raymond Charles Slegel, of Ellicott City, Md., B. S. Drexel Institute of Technology, 1955. Management Science.

Benjamin Robert Slowik, of Baltimore, Md., B. S. E. The Johns Hopkins University, 1965. Management Science.

James Frank Smola, of Silver Spring, Md., B. S. Illinois Institute of Technology, 1951. Numerical Science.

Lorin Jerome Strigel, of Silver Spring, Md., B. E. E. Marquette University, 1964. Numerical Science.

Robert Norman Tap, of Falls Church, Va., B. S. E. University of Michigan, 1960; M. S., 1963. Management Science.

William Morley Punshon Taylor, of Silver Spring, Md., B. S. Duke University, 1962; M. S. University of Florida, 1965. Numerical Science.

Lawrence Eugene Tisserand, of Adelphi, Md., B. S. University of Maryland, 1954; M. S., 1962. Numerical Science.

Allan Paul Tober, of Lutherville, Md., B. A. Towson State College (Md.), 1964. Numerical Science.

John Arthur White, of Chevy Chase, Md., B. S. United States Naval Academy, 1952; M. S. E. E. University of Illinois, 1958. Numerical Science.

John Welti White, of Gaithersburg, Md., B. E. E. Rensselaer Polytechnic Institute, 1957. Management Science.

Walter Junior Wysocki, of Annapolis, Md., B. S. The Johns Hopkins University, 1966. Electrical Engineering.

Elwood Eugene Zimmerman, of Wheaton, Md., B. S. Wheaton College, 1964. Numerical Science.

Dennis Lee Zitterkopf, of Greenbelt, Md., B. S. E. E. Kansas State University, 1962. Electrical Engineering.

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MASTERS OF EDUCATION

Jeanne Wood Adkins, of Glen Arm, Md., B. S. Towson State College (Md.), 1962.

Doris Marie Armstrong, of Georgetown, Ont., Canada, B. S. The Johns Hopkins University, 1957.

Helen McKinney Becker, of Annapolis, Md., B. S. West Virginia Wesleyan, 1953.

Paul Reed Binder, of Columbia, Md., B. A. The Johns Hopkins University, 1967.

Richard Edward Bishop, of Bel Air, Md., B. S. St. Francis College, 1962.

Judith Gutenplan Blanco, of Pittsburgh, Pa., B. S. Pennsylvania State University, 1966.

Scharlene Oney Branum, of Baltimore, Md., B. A. Berea College, 1947.

Rae Jean Bryant, of Baltimore, Md., A. B. Marshall University, 1948.

Merrill Reid Bush, of Baltimore, Md., B. A. Ohio Wesleyan University, 1963.

Jean Smith Butcher, of Columbia, Md., B. S. East Stroudsburg State College (Pa.), 1949.

Celia Virginia Lofton Carr, of Baltimore, Md., B. S. Morgan State College (Md.), 1965.

Dorothy Bell Cherry, of Baltimore, Md., B. S. Coppin State College (Md.), 1961.

Ralph Joseph Close, of Baltimore, Md., B. A. Western Maryland College, 1956.

Charlene Buckner Coleman, of Baltimore, Md., B. S. Coppin State College (Md.), 1956.

Nancy Van Westen Cox, of Baltimore, Md., B. A. University of Michigan, 1963.

John Peter Creighton, of Baltimore, Md., B.S., Seton Hall University, 1950.

Jeanne Harvey Cummings, of Baltimore, Md., B. S. Morgan State College (Md.), 1946.

Carlyn Read Dawson, of Baltimore, Md., A. B. Westminster College, 1947.

Kathleen Ferguson Dennis, of Baltimore, Md., B. A. Florida Presbyterian College, 1964.

Willis Elbert Dewberry, Sr., of Baltimore, Md., A. B. George Washington University, 1949; B. D. Southern Baptist Theological Seminary, 1952; Th. M., 1953.

Lydia Ethel Dieter, of Costa Mesa, Calif., B. S. University of Maryland, 1964.

Claire Smallwood Dorsey, of Baltimore, Md., B. S. Coppin State College (Md.), 1949.

Sarah Carter Dyce, of Baltimore, Md., B. S. Coppin State Teachers College (Md.), 1953.

Brenda Saltzman Ellner, of Cleveland, Ohio, B. S. Cornell University, 1967.

Elizabeth Jane Feusahrens, of Pasadena, Md., B. S. Ed. Seton Hall University, 1957.

Frances Mae Finney, of Baltimore, Md., A. B. North Carolina College, 1952.

Roger Louis Foster, of Baltimore, Md., B. S. Towson State College (Md.), 1963.

Eileen McLaren Frazier, of Laurel, Md., B. S. Fresno State College (Calif.), 1964.

Anna Mae Dansereau Frederick, of Baltimore, Md., B. S. Towson State College (Md.), 1960.

Janice Burdge French, of Baltimore, Md., B. S. Hood College, 1956.

Mary Ann Yeager George, of Baltimore, Md., B. S. in Nursing University of Maryland, 1964.

Catherone Chell Gill, of Baltimore, Md., B. S. Towson State College (Md.), 1953.

Rita Levor Goldstein, of Lutherville, Md., B. S. Towson State College (Md.), 1954.

Delores Weaver Goode, of Baltimore, Md., B. A. Morgan State College (Md.), 1965.

Celia Waldron Graham, of Baltimore, Md., A. B. West Virginia State College, 1953.

Elsie Gertrude Hackett, of Baltimore, Md., B. S. Coppin State College (Md.), 1953.

Joan Hahn, of Baltimore, Md., B. S. University of Maryland, 1962.

Paul Clifford Heitmann, of Baltimore, Md., B. S. Concordia Teachers College (Ill.), 1963.

Claire Reissig Hershfield, of Glen Arm, Md., B. S. Towson State College (Md.), 1954.

Janice Ross Hoffman, of Baltimore, Md., B. S. Towson State College (Md.), 1961.

Nellie Gorman Holland, of Baltimore, Md., B. A. Mount Holyoke College, 1949.

Thomas James Hollyday, of Easton, Md., B. A. The Johns Hopkins University, 1964.

Ellen Louise Hopkins, of Baltimore, Md., B. A. Frostburg State College (Md.), 1964.

Ellen Louise Dolvey Howard, of Baltimore, Md., B. S. Morgan State College (Md.), 1951.

Rita Francis Hubbard, of Baltimore, Md., B. A. Dillard University, 1952.

Edna Mae Jackson, of Baltimore, Md., B. S. Morgan State College (Md.), 1968.

Edna Brown Johnson, of Baltimore, Md., B. S. Coppin State College (Md.), 1953.

Stanley Benjamin Johnson III, of Baltimore, Md., A. B. Haverford College, 1957; S. T. B. Harvard University, 1960.

Raymond Welty Johnston, of Glen Burnie, Md., B. S. California State College (Pa.), 1967.

Frances Marie Elizabeth King, of Baltimore, Md., B. A. University of Maryland, 1946; M. N. Yale University, 1957.

Lois Johnson Kyler, of Baltimore, Md., B. S. Coppin State College (Md.), 1962.

Gilbert DeWayne Lease, of Baltimore, Md., B. S. Pennsylvania State University, 1959.

David Ross Leasure, of Baltimore, Md., B. S. Frostburg State College (Md.), 1964.

Bernice Branford Lewis, of Baltimore, Md., B. S. Coppin State College (Md.), 1946.

Patricia Shupik Littman, of Baltimore, Md., B. A. Goucher College, 1965.

Esther Shulman Love, of Baltimore, Md., A. B. Goucher College, 1945.

Vernice Winifield Mack, of Frederick, Md., B. S. Virginia State College, 1955.

John Winner McCorkill, of Glen Burnie, Md., B. S. Bloomsburg State College (Pa.), 1964.

Suzanne Jones Mericle, of Joppa, Md., B. of Ed. University of Toledo, 1961.

Joan Adele Merryman, of Baltimore, Md., B. S. Frostburg State College (Md.), 1967.

John Randolph Miller, of Timonium, Md., A. B. The Johns Hopkins University, 1966.

Susan Carol Miller, of Baltimore, Md., B. S. Towson State College (Md.), 1965.

William Curran Mules, of McDonogh, Md., A. B. Princeton University, 1963.

A. Isabelle Summers Muller, of Baltimore, Md., B.S. The Johns Hopkins University, 1943.

Ellen Krupsaw Nemhauser, of Baltimore, Md., B.A. Northwestern University, 1961.

Clara Ferree Newman, of Pasadena, Md., B.A. Duke University, 1947.

Eileen Bernstein Offit, of Baltimore, Md., B.A. University of Maryland, 1949.

Joiin Talbot Ordeman, of Brooklandville, Md., M.A. Columbia University, 1956.

Thomas Joseph Penn, of Baltimore, Md., A.B., St. Mary's Seminary (Baltimore, Md.), 1955; S.T.B., 1958.

Mary Brunner Poling, of Glen Burnie, Md., B.S. Towson State College (Md.), 1963.

David Rawlings Poole, of Baltimore, Md., A.B. St. Mary's Seminary and University, 1967.

Florence Buckner Pulley, of Baltimore, Md., B.S. Morgan State College (Md.), 1939.

Emily Krynski Renkiewicz, of Severna Park, Md., A.B. Wayne University, 1949.

Maureen Anne Redman Ricker, of Baltimore, Md., B.S. Salisbury State College (Md.), 1965.

Joan Carol Rosen, of Baltimore, Md., B.S. Drexel Institute of Technology, 1966.

Mary Sue Rubenstein, of Baltimore, Md., B.S. Towson State College (Md.), 1965.

Barbara Faye Bidnick Rubin, of Baltimore, Md., B.S. Towson State College (Md.), 1966.

Albert Joseph Rykiel, Jr., of Baltimore, Md., B.S. Loyola College, 1958.

Eda Joan Scheir, of Baltimore, Md., B.A. Hood College, 1957.

Susan Frey Scheir, of Baltimore, Md., B.S. University of Maryland, 1961.

William Joseph Schmalzer III, of Baltimore, Md., B.S. Towson State College (Md.), 1964.

Marian Clary Scott, of Baltimore, Md., B.S. Coppin State College (Md.), 1947.

George Kenneth Seifert, of Baltimore, Md., B.S. Towson State College (Md.), 1958.

Sandra Simonson, of Cresskill, N.J., B.S. Mills College of Education, 1965.

Clifton Luther Smith II, of Bel Air, Md., B.A. University of Maryland, 1958.

Nellie Mae Snowden, of Baltimore, Md., B.S. Coppin State College (Md.), 1964.

Ozro Richard Steigelman, of Baltimore, Md., B.S. United States Military Academy, 1954; M.S. University of Michigan, 1963.

Margaret Seidl Stewart, of Baltimore, Md., B.S. Oswego College, 1965.

Clarence Eiichi Takeuchi, of Saipan, Mariana Islands, B.A. The Johns Hopkins University, 1964.

Elizabeth Crean Tierney, of Timonium, Md., B.S.E. State College at Westfield (Mass.), 1936.

Patricia Lee Totzauer, of Baltimore, Md., B.S. Towson State College (Md.), 1962.

Lauralee Fritts Whitmore, Linthicum, Md., B.A. Longwood College, 1952.

Glennys Rae Wise, of Baltimore, Md., B.A. Adams State College (Colo.), 1960.

Iris M. Zimmerman, of Frederick, Md., B.S. Towson State College (Md.), 1952.

Eileen Margaret Zindel, of Pasadena, Md., B.S. Seton Hall University, 1952.

Lydia P. B. Zink, of Baltimore, Md., B.S. The Johns Hopkins University, 1960.

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MASTERS OF LIBERAL ARTS

Katherine Howard Acton, of Baltimore, Md., B.A., Newcomb College, 1928.

Elizabeth Claire Albert, of Baltimore, Md., A.B. College of Notre Dame of Maryland, 1966.

Jean Ford Amos, of Baltimore, Md., B.A. University of Maryland, 1944.

Charles Perry Andrews, Jr., of Norge, Va., B.S.E.E. University of Colorado, 1960.

Sandra Ann Joannes Antoine, of Baltimore, Md., B.S. The Johns Hopkins University, 1967.

June Williams Atkin, of Whiteford, Md., A.B. Washington College, 1951.

Wanda Kay Atkins, of Pasadena, Md., A.B. Middle Tennessee State College, 1964.

Edgar Reuben Bare, of Williamsport, Md., B.S. in C.E. Virginia Military Institute, 1954.

Linda Ebert Batt, of Baltimore, Md., B. A. University of Delaware, 1965.

Victor Enrique Beauge, of Esperanza, Argentina, Lic. Pol. Sci. and Diplomacy National University of the Littoral, Argentina, 1961.

Judith Anne Benedini, of Baltimore, Md., B. A. Ursinus College, 1963.

John Thomas Bisset, of Baltimore, Md., B. A. The Greenville College, 1964; Th. B., 1965.

Judy Pauline Blackwelder, of Baltimore, Md., B. A. University of Colorado, 1964.

Susan Mary Blum, of Baltimore, Md., A. B. College of Notre Dame of Maryland, 1965.

Catherine Rose Borsella, of Baltimore, Md., B. A. Towson State College (Md.), 1965.

Mary Timbers Bostwick, of Catonsville, Md., B. S. University of Wisconsin, 1948.

Ellen Earp Brown, of Baltimore, Md., B. A. Drew University, 1963.

James Anthony Bryan, of Baltimore, Md., A. B. Western Maryland College, 1961.

Tiann DeLong Buker, of Lutherville, Md., A. B. Wheaton College, 1959.

Jerome Paul Bukovsky, Jr., of Baltimore, Md., B. S. The Johns Hopkins University, 1964.

Miriam Burke, of Baltimore, Md., B. S. The Johns Hopkins University, 1967.

Joan Schmidt Burnett, of Baltimore, Md., B. S. in Ed. State University of New York, Brockport, 1956.

Elizabeth Evans Carr, of Baltimore, Md., B. Mus. Peabody Conservatory, 1950.

Eleanor Echternach Carson, of Baltimore, Md., B. A. University of Idaho, 1936.

Richard Lewis Cary, of Atlanta, Texas, B. A. Municipal University of Wichita, 1950.

Jack Laurence Chalker, of Baltimore, Md., B. S. Towson State College (Md.), 1966.

Ila Widenhouse Christenbury, of Kingsville, Md., B. A. The Woman's College of the University of North Carolina, 1963.

Frank Burruss Cockrell, of Clarksville, Md., B. S. E. The Johns Hopkins University, 1963.

Jane Whitehouse Cohen, of Baltimore, Md., A. B. Goucher College, 1958.

Barbara Rae Cook, of Glen Burnie, Md., B. A. Western Maryland College, 1964.

David Simon Cordish, of Baltimore, Md., A. B. The Johns Hopkins University, 1960; LL. B. University of Maryland, 1963.

George Harry Cosman, of Reisterstown, Md., B. S. Acadia University, 1950.

Nancy Ingalls Crossfield, of Baltimore, Md., A. B. Wilson College, 1962.

Victor Hugo Dates, of Baltimore, Md., B. A. The Johns Hopkins University, 1960; LL. B. Georgetown University, 1963.

Sylvia Smeyne Davis, of Baltimore, Md., A. B. Goucher College, 1949.

Robert DeWingaerde, of Baltimore, Md., B. S. The Johns Hopkins University, 1967.

Anna Schiaffino Donnelly, of Baltimore, Md., B. A. College of Notre Dame of Maryland, 1964.

Patricia Anne Dorsey, of Baltimore, Md., B. S. Towson State College (Md.), 1965.

Jude Marie Dyslin, R. S. M., of Baltimore, Md., A. B. Mount St. Agnes College, 1957.

James McAlpin Easter, of Owings Mills, Md., B. S. E. The Johns Hopkins University, 1968.

Grace Ray Edgar, of Salisbury, Md., B. S. Towson State College (Md.), 1963.

Celia Buntin Emmericii, of Houston, Texas, B. A. E. University of Mississippi, 1951.

Marshall Leigh Fallwell, of Farmville, Va., M. A. Florence State College (Ala.), 1963.

Frank Feuille IV, of El Paso, Texas, LL. B. University of Texas, 1966.

Jeanne Elizabeth Fisher, of Baltimore, Md., B. S. The Johns Hopkins University, 1966.

Kenneth Robert Flickinger, of Baltimore, Md., B. S. Towson State College (Md.), 1961.

Mary Carroll Ebaugh Fox, of Baltimore, Md., B. S. St. Joseph College, 1967.

Linsner Thomas Freitag, of Baltimore, Md., B. S. The Johns Hopkins University, 1967.

Harriett Shanks Gable, of Palos Verdes Peninsula, Calif., B. S. The Johns Hopkins University, 1964.

Frances Bruning Ghingher, of Baltimore, Md., B. S. Towson State College (Md.), 1954.

Rodney Stonesifer Gobrecht, of Baltimore, Md., B. A. Gettysburg College, 1964.

Robert Joseph Goldrick, of Owings Mills, Md., B. A. Iona College, 1961.

Carol Gevecker Graves, of Baltimore, Md., B. A. Drury College, 1962.

Louise Weimann Green, of Havre de Grace, Md., B. S. The Johns Hopkins University, 1965.

Frank Robert Haight, of Baltimore, Md., B. A. Furman University, 1958.

John Moffett Harman III, of Owings Mills, Md., A. B. University of Maryland, 1964.

George Irving Hatfield, of Towson, Md., B. A. The College of Wooster, 1939.

George Abner Hays, of Baltimore, Md., B. S. Ed. Frostburg State College (Md.), 1959.

Britt I. Monica Holmstrom, of Hydes, Md., B. S. The Johns Hopkins University, 1967.

Dona Elizabeth Houseal, of Rockville, Md., B. A. Dickinson College, 1964.

Willie Edward Huber, of Baltimore, Md., A. B. East Carolina College, 1959.

C. Robert Iannacone, of Baltimore, Md., B. S. University of Maryland, 1964.

Sharon Lynn Goldberg Kagan, of Baltimore, Md., A. B. University of Michigan, 1965.

Carole Goldstone Katz, of Baltimore, Md., B. A. Towson State College (Md.), 1963.

Rena Cohen Kelly, of Baltimore, Md., B. S. Towson State College (Md.), 1963.

Eleanor Farson King, of Baltimore, Md., A. B. College of Notre Dame of Maryland, 1944; M. S. S. W. Catholic University of America, 1948.

Gwendolyn Griggsby Lamont, of Baltimore, Md., B. A. Howard University, 1949.

James Crosby Lawlor, of Lutherville, Md., B. S. Towson State College (Md.), 1965.

Frederick Leist, Jr., of Baltimore, Md., B. S. The Johns Hopkins University, 1965.

Bernard Lerner, of Baltimore, Md., A. B. The Johns Hopkins University, 1955.

Charlotte Silberstein Lichtenberg, of Baltimore, Md., A. B. Goucher College, 1949.

Douglas Jerome Luebehusen, of Baltimore, Md., B. S. Loyola College, 1963.

Katharine Martin Lynch, of Washington, D. C., B. S. Wilson Teachers College, 1953.

Loretta Caroline Mack, of Baltimore, Md., B. S. Ed. Kutztown State College (Pa.), 1963.

Thelma Mary Mayers, of Baltimore, Md., M. Ed. Loyola College, 1953.

Anita Marie McCain, of Annapolis, Md., B. A. George Washington University, 1964.

Mary Dobson Metzger, of Chestertown, Md., B. S. Towson State College (Md.), 1958.

Evelynne Frohman Meyerson, of Baltimore, Md., B. S. The Johns Hopkins University, 1967.

Linda DeJong Miller, of Castro Valley, Calif., A. B. University of California, Berkeley, 1963.

Margaret Routzahn Miller, of Mt. Airy, Md., B. A. Western Maryland College, 1935.

Joseph Dubbs Mish, Jr., of Hagerstown, Md., B. A. Western Maryland College, 1965.

Eugenie Abercrombie Mudge, of Ruxton, Md., B. S. The Johns Hopkins University, 1956.

Jacqueline A. Niedentohl, of Baltimore, Md., B. A. University of Maryland, 1949.

Joseph Francis O'Connor, of Haverton, Pa., A. B. Manhattan College, 1948.

Patricia Ann Overly, of Reisterstown, Md., B. S. Skidmore College, 1961; M. Ed. University of North Carolina, 1963.

Richard James Paar, of Annapolis, Md., B. S. Ed. Indiana State College (Pa.), 1964.

David Hahn Poist, of Baltimore, Md., S. T. B. Berkeley Divinity School, 1965.

Mary Clare Powell, of Baltimore, Md., B. S. Towson State College (Md.), 1964.

Barbara Posner Renbaum, of Baltimore, Md., B. A. Goucher College, 1965.

Gordon Albert Richardson, of Takoma Park, Md., B. S. George Washington University, 1958; LL. B., 1961.

Jane Lynn Richardson, of Takoma Park, Md., A. B. Hood College, 1963.

Retta Bainbridge Robbins, of Baltimore, Md., B. F. A. Richmond Professional Institute, 1956.

Samuel Stevens Sands, Jr., of Baltimore, Md., B. A. Randolph Macon College, 1966.

Clementine Theresa Scharf, of Baltimore, Md., B. S. The Johns Hopkins University, 1949.

Donald Stephen Shaffer, of Eldon, Iowa, B. S. Sophia University (Tokyo, Japan), 1961.

Josephine Felter Shyers, of Baltimore, Md., B. S. The Johns Hopkins University, 1944.

Mary Joan Sincock, of Baltimore, Md., A. B. College of Notre Dame of Maryland, 1964.

Robert Joseph Smith, of Bel Air, Md., B. S. Manhattan College, 1949.

Grace Scheidt Sparks, of Cockeysville, Md., B. S. Towson State College (Md.), 1961.

Jane Spencer, of Baltimore, Md., B. S. The Johns Hopkins University, 1965.

Raymond John Spitznas, of Baltimore, Md., B. S. University of Maryland, 1957.

John Francis Sullivan, of Timonium, Md., B. S. Springfield College, 1949; M. Ed. The Johns Hopkins University, 1954; C. A. S. E., 1960.

Leo Edwin Tabat, Jr., of Sykesville, Md., B. S. Iowa State University, 1959.

Carolyn Fay Thomas, of Baltimore, Md., B. A. University of North Carolina, 1964.

Edwin Lyburn Thomas, of Baltimore, Md., B. S. The Johns Hopkins University, 1965.

Marguerite Eleanor Thompson, of Ellicott City, Md., B. S. The Johns Hopkins University, 1958; M. L. S. Rutgers University, 1961.

Phyllis Nan Vogelhut, of Baltimore, Md., B. S. University of Maryland, 1964.

Linda N. Weisfeldt, of Baltimore, Md., B. A. Northwestern University, 1963.

Helen Catherine Wenzel, of Baltimore, Md., B. S. The Johns Hopkins University, 1966.

Mary Patricia Willette, of Baltimore, Md., B. S. Towson State College (Md.), 1963.

Dorothy Gerting Williams, of Lutherville, Md., B. S. The Johns Hopkins University, 1948.

Janet Via Williams, of Glen Arm, Md., M. Ed. Loyola College, 1964.

Marlene Collector Wolfe, of Baltimore, Md., A. B. Hood College, 1965.

Norman Wolfson, of Rockville, Md., B. A. Brooklyn College, 1959.

Anne Poole Worthington, of Glen Burnie, Md., A. B. Meredith College, 1965.

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CERTIFICATES OF ADVANCED STUDY IN EDUCATION

Leon Branum, of Baltimore, Md., M. A. Memphis State University, 1956.

Thurman Orien Butcher, of Columbia, Md., M. Ed. Western Maryland College, 1961.

Anthony Francis Capezio, of Baltimore, Md., A. B. Loyola College, 1956; M. Ed., 1965.

Vondalee Harris Clark, of Baltimore, Md., B. S. Elem. Ed. Coppin State College (Md.), 1955; M. Ed. The Johns Hopkins University, 1962.

Mary Singleton Johnson, of Baltimore, Md., B. S. Coppin State College (Md.), 1946; M. A. New York University, 1952.

William Eugene Klarner, of Baltimore, Md., B. S. Loyola College, 1951; M. Ed. The Johns Hopkins University, 1967.

Victor Bernard Kotulak, of Baltimore, Md., A. B. Wilkes College, 1951; M. Ed. The Johns Hopkins University, 1963.

Dorothy Kathryn Kreek, of Millers, Md., M. Ed. Loyola College, 1963.

Willard Evan Lloyd, of Baltimore, Md., M. S. Bucknell University, 1951.

William Lloyd McCraney, of Baltimore, Md., A. B. The American University, 1961; M. L. A. The Johns Hopkins University, 1966.

Charles Norman Miller, of Baltimore, Md., B. S. Towson State College (Md.), 1965; M. Ed. The Johns Hopkins University, 1967.

Herman Rudolph Phillips, of Baltimore, Md., M. A. Atlanta University, 1957.

Gloria Forshlager Pruce, of Baltimore, Md., B. S. Towson State College (Md.), 1951; M. Ed. The Johns Hopkins University, 1965.

Daniel Austin Sistare, of Fairhaven, Mass., M. A. T. Brown University, 1966.

Raymond Alfred Stevens, of Millers, Md., B. A. University of Maryland, 1958; M. L. A. The Johns Hopkins University, 1967.

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MASTERS OF SCIENCE

in the School of Hygiene and Public Health

with titles of theses

Mary Gomes Dowling, of Honolulu, Hawaii, B.S. University of Santa Clara, 1966. Biostatistics.

Methods and Analysis of Follow-up Studies.

Elizabeth Baker Kelley, of Baltimore, Md., B.S. The College of William and Mary, 1949. Population and Family Health (Population Dynamics).

Factors Associated with a Rise in Prematurity, 1950-1965.

Ciriaca Quesada Manalo, of the Republic of the Philippines, M.D. University of Santo Tomas, 1953; M.P.H. University of the Philippines, 1964. Public Health Administration.

A Study of Cardiac Cases in the Crippled Children's Program, Anne Arundel County.

Jehoshua Arie Perper, of Israel, M.D. Hebrew University-Hadassah Medical School, Jerusalem, 1962; B.L. Hebrew University of Jerusalem, 1966. Public Health Administration.

Experimental Trauma of Liver—A Study of Healing of Liver Wounds in Rats following Mechanically Induced Injuries.

James Albert Roseboro, of Charlotte, N.C., B.S. Johnson C. Smith University, 1965. Radiological Science.

The Design and Dosimetry of a Continuous Gamma Ray Irradiation Facility Utilizing Cesium-137.

Joyce Novick Schiffman, of Columbia, Md., B.S. University of Rhode Island, 1966. Biostatistics.

Comparison of Nonparametric Regression Estimates.

Farida K. Shah, of Poona, Maharashtra, India, B.Sc. Nowrosjee Wadia College, 1956. Population and Family Health.

Analysis of the Effects of Some Factors on Infant Mortality in Baltimore City.

Alan J. Talbert, of Baltimore, Md., B.S. University of Colorado, 1950. Biostatistics.

Recursive Multiple Regression Analysis with a Polychotomous Response Variable.

(8)

DOCTORS OF SCIENCE

in the School of Hygiene and Public Health

with titles of theses

Feroz Ahmed, of Karachi, Pakistan, B.Sc. University of Karachi, 1963; M.S. Public Health The University of Hawaii, 1966. Population and Family Health (Population Dynamics).

Age at Marriage in Pakistan: Its Correlates and Effects on Fertility.

Robert Jay Blendon, of Laurel, Md., B.A. Marietta College, 1964; M.B.A. The University of Chicago, 1966; M.P.H. The Johns Hopkins University, 1967. Medical Care and Hospitals.

Hospital Regionalization in the Absence of a Formally Coordinated System: Vermont, A Case Study.

Bessie Ruth Foster, of Bunkie, La., B.S. in Secondary Education Grambling College of Louisiana, 1956; M.S. Oregon State University, 1961; M.S. in Hygiene Harvard University, 1962. Radiological Science.

The Effect of Fractionated and Continuous Irradiation on Lymphoid Cell Proliferation in the Thymus and Spleen.

Duane J. Gubler, of Santa Clara, Utah, B.S. Utah State University, 1963; M.S. University of Hawaii, 1965. Pathobiology.

A Study of Comparative Biology and Interspecific Competition Between *Aedes* (*Stegomyia*) *albopictus* Skuse and *Aedes* (*Stegomyia*) *polynesiensis* Marks.

Jack R. Mills, of White Plains, N.Y., B.A. University of Texas, 1957; M.A., 1959. Audiology and Speech.

Study of Some Sequencing Skills in Young Children.

Wesley Kaname Ota, of Richmond, Calif., A.B. Univerversity of California, Berkeley, 1950; M.A., 1961. Pathobiology.

Family Based Longitudinal Study of Respiratory Viruses in a Calcutta Bustee.

John Howard Richardson, Jr., of Norfolk, Virginia, B.S. Indiana State University, 1958; M.A., 1961; M.P.H. The University of North Carolina, 1965. Mental Hygiene.

Feeding Efficiency of the Shrews, Suncus and Blarina.

Ilan Shif, of Baltimore, Md., M. Sc. The Hebrew University of Jerusalem, 1960. Pathobiology.

In Vitro Interaction between Mouse Hepatitis Virus and Mouse Macrophages.

James Henry Stebbings, Jr., of East Saint Louis, Ill., B. S. Saint Louis University, 1960. Chronic Diseases.

Respiratory Disease in a Population of Residentially-Mobile Nonsmokers in Hagerstown, Maryland.

Gregory Hayes Tignor, of Baltimore, Md., B. S. Yale University, 1960. Epidemiology.

Group B Arbovirus Responses in Spider Monkeys.

Francis S. L. Williamson, of Baltimore, Md., B. S. San Diego State College, 1950; M. A. University of California, Berkeley, 1955. Pathobiology.

The Ecology of Poxvirus Disease in the Starling, *Sturnus vulgaris L.*

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MASTERS OF PUBLIC HEALTH

Elvin Eugene Adams, of Takoma Park, Md., B. A. Columbia Union College, 1963; M. D. Loma Linda University, 1967.

Enrique Francisco Agorio, of Baltimore, Md., M. D. University of Uruguay, 1957.

Mohammed Fatiu Ademola Akesode, of Lagos, Nigeria, Africa, M. B. B. S. University of Lagos, 1967.

Michael Taferi Amde, of Eritrea, Ethiopia, B. Sc. Public Health College, Gondar, 1964.

Daniel Asamoa Ampofo, of Accra, Ghana, M. B. B. S. London Hospital Medical College, 1954.

Sunny Andrews, of Kerala State, India, A. B. Lincoln University, 1961; M. S. W. University of Pennsylvania, 1961.

Hideyasu Aoyama, of Okayama, Japan, M. D. Okayama University Medical School, 1959; D. P. H. National Institute of Public Health, Tokyo, 1963; D. Med. Sc. Okayama University Medical School, 1964.

William Herbert Armes, Jr., of Memphis, Tenn., M. D. University of Tennessee, 1963.

Federico Guillermo Arthes, of Baltimore, Md., M. D. University of San Carlos, 1955.

Jo Eirik Asvall, of Baerum, Norway, M. D. University of Oslo, 1956.

William Vincent Banks, of Cold Springs, Ky., A. B. Villa Madonna College, 1963; M. D. University of Kentucky, 1967.

Russell Boyd Barker, of Oxon Hill, Md., B. S. Ohio State University, 1958; D. V. M. Ohio State University Veterinarian School, 1960.

Pilares J. Bastidas Contreras, of San Cristobal, Venezuela, Civil Engineer University of the Andes, 1963.

Kul Bhushan, of Punjab, India, M. D. Government Medical College, 1948.

Benjamin H. Bonnlander, of Chester, Vt., B. Sc. McGill University, 1953; M. S. University of Michigan, 1954; M. D. McGill University, 1959.

John Ladd Buckingham, of Jacksonville, Fla., B. S. Stetson University, 1955; M. D. Bowman Gray School of Medicine, 1959.

Patricia A. Burkhardt, of Philadelphia, Pa., B. S. N. St. Louis University, 1967.

Jule Ann Callahan, of Philadelphia, Pa., B. S. N. University of Pennsylvania, 1963.

Lawrence James Casazza, of Baltimore, Md., A. B. Canisius College, 1960; M. D. State University of New York at Buffalo, 1964.

Pauline Doris Chambers, of Indianapolis, Ind., A. B. Indiana University, 1949; M. D., 1952.

Shiu-Hsiung Chao, of Taipei, Taiwan, M. B. Faculty of Medicine, National Defense Medical Center, 1961.

Muhammed Taifur Rahman Chaudhury, of Chittagong, Pakistan, M. B. B. S. Dacca Medical College, 1954; D. P. H. Institute of Hygiene and Preventive Medicine, 1956.

John Tseng-Yu Chiao, of Regina, Saskatchewan, Canada, B. Sc. Peking University, 1943; M. D. Peking University, Medical School, 1949.

John Jarrett Clinton, Jr., of Hutchinson, Kans., A. B. Baker University, 1960; M. D. Kansas University, 1964.

Reginald Bruce Conyngham, of Aukland, New Zealand, M. B. Ch. B. University of New Zealand, 1951.

Frank Thomas Corker, of Athens, Ga., B. A. Emory University, 1957; M. D., 1961.

Gene Southall Cranch, of Miami, Fla., B. A. University of Maine, 1949; M. A. University of Chicago, 1956.

John Wright Culton, of Hemet, Calif., B. A. San Diego State College, 1960; M. D. University of California, Los Angeles, 1965.

Joe Harris Davis, of Chesterfield, Tenn., B. A. Vanderbilt University, 1961; M. D., 1965.

Maida Oney Davis, of Castlewood, Va., B. S. in Nurs. University of Virginia, 1968.

Thomas Rickard Dundon, of Milwaukee, Wis., B. S. St. Thomas College, 1951; M. S. St. Louis University, 1960; Ph. D., 1963; M. A. Saint Mary's University, 1967.

Betty Hopkins Duvall, of Upper Marlboro, Md., B. S. University of Maryland, 1960.

Juan Martin Flavier, of Manila, Philippines, M. D. University of Philippines, 1960.

David Marshall French, of Washington, D. C., M. D. Howard University, 1948.

Shoshana Gundersheimer Frensdorff, of Rehovot, Israel, B. Sc. Columbia University, 1956; M. Sc. City College, New York, 1956.

James Powell Ganley, of Syracuse, N. Y., B. S. Mt. St. Mary's College, 1959; M. D. Georgetown School of Medicine, 1963.

Howard Joel Garber, of Baltimore, Md., A. B. Western Reserve University, 1959; M. D., 1963.

Gordon Lee M. Gibson, of St. Petersburg, Fla., B. A. University of Florida, 1961; M. D. Emory University School of Medicine, 1965.

Shashishekhar Gore, of Kalyan, India, I. Sc. Fergusson College, 1953; M. B. B. S., B. J. Medical College, 1958; M. D. Grant Medical College, 1962.

Martin Ely Gorosh, of Brooklyn, N. Y., A. B. Brooklyn College, 1959.

John Adams Grant, of Brooklandville, Md., A. B. Gettysburg College, 1953; M. D. University of Pennsylvania, 1957.

Howard Jay Greene, of Canoga Park, Calif., B. S. Univerversity of Wisconsin, 1964; D. D. S. University of Illinois, 1968.

Susan Russ Guarnieri, of Philadelphia, Pa., B. S. St. Mary of the Springs College, 1963; M. D. Ohio State University, School of Medicine, 1966.

Helen Margaret Hackman, of Fairfax, Va., B. A. Trinity College, Ireland, 1948; M. B., B. Ch., B. A. O. University of Ireland, 1950.

Janet Kay Heinrich, of Flint, Mich., B. S. in Nurs. The University of Michigan, 1966.

Nabila Mohamed Hidayet, of Alexandria, U. A. R., M. B., B. Ch. Ain Shams University Medical School, 1964.

Thomas Murray Holcomb, of San Antonio, Texas, A. B. St. Michael's College, 1944; M. D. University of Vermont, 1947.

Mary Lowrey Holman, of Silver Spring, Md., B. S. Columbia Union College, Washington, D. C., 1968.

William Boyd Hope, Jr., of Decatur, Ga., B. S. University of Tennessee, 1960; M. S., 1962.

Albert Johnson, Jr., of Washington, D. C., A. B. Lincoln University, 1956; M. S. Howard University, 1958; M. D., 1966.

Kit George Johnson, of Klamath Falls, Oreg., B. S. Lewis and Clark College, 1957; M. S. University of Oregon Medical School, 1962; M. D., 1962.

George Joseph, of Kerala State, India, B. Sc. University of Madras, 1957; M. B. B. S. University of Kerala, 1963.

Alfred I. Kaplan, of New York, N. Y., B. A. Columbia University, 1960; M. D. College of Physicians and Surgeons, New York, 1964.

Quamar Jahan Begum Khan, of Lahore, Pakistan, M. B. B. S. Fatima Jinnah Medical College for Women, Lahore, 1965.

Sandra Gail King, of Laceyville, Pa., B. S. in Nurs. University of Maryland, 1967.

Paul Krijger, of Lead, S. Dak., B. A. University of Minnesota, 1959; M. D. The Johns Hopkins University, 1963.

James Louis Kurowski, of Greenville, Miss., M. D. Creighton University, 1965.

J. Brett Lazar, of Owings Mills, Md., B. A. University of Vermont, 1959; M. D. Albany Medical College, 1966.

George Martin Leiby, of Baltimore, Md., B. S. University of Redlands, 1957; M. D. The Johns Hopkins School of Medicine, 1961.

David Morris Levine, of Pittsburgh, Pa., A. B. Brandeis University, 1959; M. D. Vermont Medical School, 1964.

Steven Lipson, of Towson, Md., B. A. Cornell University, 1957; M. D. New York University, 1961.

Jesus Miciano Lopez, of Glen Arm, Md., M. D. University of Santo Tomas, Manila, 1944.

Gertrude Sheva Lum, of Fort Thomas, Ky., A. B. College of Wooster, 1950; M. S. George Washington University, 1952; Ph. D., 1956.

Selma Lee Markowitz, of Baltimore, Md., B. S. Syracuse University, 1941.

Janet L. K. Miller, of Landover Hills, Md., B. S. N. University of Maryland, 1968.

Louis Winaker Miller, of Baltimore, Md., B. S. University of Maryland, 1963; M. D., 1967.

Moeljono Notosoedirdjo, of Surabaja, Indonesia, M. D. Airlangga University, 1961.

Barbara Ann Mullin, of Upper Darby, Pa., B. S. in Nurs., University of Pennsylvania School of Nursing, 1963.

Nubia Munoz, of Cali, Colombia, M. D. University of Valle, Faculty of Medicine, 1964.

Herbert G. Munson, of Midland, Texas, B. A. University of Texas, 1962; M. D., 1964.

James Hamilton Murray, of Washington, D. C., B. S. Howard University, 1956; D. D. S. Meharry Medical College, 1960.

Lawrence Barry Mutty, of Melrose, Mass., A. B. Loyola College, Montreal, 1956; M. D. Faculty of Medicine, University of Ottawa, 1960.

Shirley Myers Nelson, of Heppner, Oreg., B. S. in Nurs. Lewis and Clark College, 1958.

Alice Marie Obrig, of Greenwich, Conn., B. S. N. Cornell University, 1961; M. S. Boston University, 1964.

Bankole Oludayo Ogunbamise, of Ise-Ekitig, West Nigeria, M. B. B. S. University of Lagos, Medical College, 1967.

Bennett Graham Owens, Jr., of Valdosta, Ga., B. S. The Citadel, 1960; M. D. Emory University School of Medicine, 1964.

Muriel Ayodeji Oyediran, of Lagos, Nigeria, Africa, M. B. B. S. St. Mary's Hospital Medical School, 1965.

David Martin Paige, of Baltimore, Md., B. S. Long Island University, 1960; M. D. New York Medical College, 1964.

Devadoss Nityananda Pandi, of United Kingdom, M. B. B. S. Christian Medical College, 1960.

Edward H. Parker, Jr., of Santa Ana, Calif., B. A. Harvard College, 1960; M. D. University of Southern California, 1964.

William Wade Pope, of San Francisco, Calif., A. B. Stanford University, 1958; M. D., 1961.

Cesar Rudzki, of Washington, D. C., M. D. Buenos Aires University Medical School, 1961.

James John Russell, of Taichung, Taiwan, B. S. Palmers College, England, 1953; M. D. University of London, 1959.

Yunusa Isola Salami, of Lagos, Nigeria, M. B. B. S. College of Medicine, University of Lagos, 1967.

Rafael Ignacio Salvatierra, of Caracas, Venezuela, Civil Engineer Central University of Venezuela, 1962.

Bartolome Sanchez, of Maracay, Aragua, Venezuela, Civil Engineer Central University of Venezuela, 1962.

Arumainayagam Selvaratnam, of Jaffna, Ceylon, M.B.B.S. University of Ceylon, 1959.

Dinesh P. Sinha, of Bihar, India, M. B. B. S. Darghanga Medical College, Bihar University, 1962; D. C. H. Institute of Child Health, Calcutta University, 1964.

Robert Joel Snowe, of Baltimore, Md., A. B. New York University, 1959; M. D. State University of New York, College of Medicine, Syracuse, 1964.

William Charles Story, of Little Rock, Ark., B. S. University of Arkansas, 1951; M. D., 1955.

Berry Brooks Taylor, Jr., of Cleburne, Texas, B. A. Rice University, 1963; M. D. Baylor University, 1967.

David Bartlett Thomas, of Baltimore, Md., B. S. University of Washington, 1959; M. D., 1963.

Lionel José Van Grieken, of Caracas, Venezuela, Civil Engineer Central University of Venezuela, 1960.

Gilberte Alberte Vansintejan, of Brussels, Belgium, R. N. Nurses School of The Free University of Brussels, 1964.

Mohan Singh Virick, of Sydney N. S., Canada, I. Sc. St. Paul Cathedral Mission College, 1954; M. B. B. S. Christian Medical College, 1961.

William Taylor Wallace, of West Bridgewater, Mass., A. B. Boston University, 1957; M. D. University of Vermont, 1961; D. T. M. & H. London University School of Tropical Medicine, 1965.

Nancy Moldovanyi Watkins, of Philadelphia, Pa., B. S. in Nurs. University of Pennsylvania, 1966.

John Wellman, of Balboa Heights, Canal Zone, B. A. Wayne State University, 1959; M. A. University of Kansas, 1962; M. D. University of Kansas, 1967.

Joerg Constantine Winterer, of Northampton, Mass., B. A. Haverford College, 1963; B. M. S. Dartmouth Medical School, 1965; M. D. Harvard Medical School, 1967.

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DOCTORS OF PUBLIC HEALTH

with titles of theses

Karuba Basappa, of Bangalore, Mysore, India, M. B. B. S. University of Mysore, 1955; D. P. H. University of Calcutta, 1959; M. P. H. The Johns Hopkins University, 1966. Population and Family Health (Population Dynamics).

Changes in 'High Risk' Births as Related to Race and Socio-Economic Status.

Carl Otto Helvie, of Gouverneur, N. Y., B. S. New York University, 1958; M. S. University of California, San Francisco Medical Center, 1961; M. P. H. The Johns Hopkins University, 1966. Mental Hygiene.

Factors Predictive of Adolescent Behavior.

Janie Marie Kuemmerer, of Walhalla, S. C., B. S. in Public Health Nursing The University of North Carolina, 1959; M. P. H., 1960. Public Health Administration.

Adherence to Medical Recommendations for Oral Antituberculosis Drugs.

A. Torab Mehra, of Tajrish, Tehran, A. B. Syracuse University, 1939; M. S. Columbia University, 1940; M. D. The Long Island College of Medicine, 1943; M. P. H. The Johns Hopkins University, 1945. International Health.

Attitudes of Iranian Doctors Toward Rural Service.

Vicente Navarro, of Baltimore, Md., M. D. University of Barcelona, 1963; D. M. S. A. University of Edinburgh, 1965. Public Health Administration.

A Systems Approach to Planning of Personal Health Services: A Markovian Model and its Applications in Prediction, Simulation and Goal-Seeking.

Mani Kumar Sashankar, of Darjeeling, West Bengal, India, M. B. B. S. Sir Nilratan Sirkar Medical College, Calcutta, 1954; D. P. H. All India Institute of Hygiene and Public Health, Calcutta, 1959; C. H. E. University of Calcutta, 1962; M. P. H. The Johns Hopkins University, 1966. Population and Family Health (Population Dynamics).

Evaluation of Otological Follow-up, Baltimore City Public Elementary Schools, 1966-67.

Zohair Ahmad Sebai, of Mecca, Saudi Arabia, M. B., B. CH. Ain Shams University, 1963; D. T. M. Bernhard Nocht Institute for Tropical Diseases, 1965; M. P. H. The Johns Hopkins University, 1966. International Health.

The Health of the Bedouin Family in a Changing Arabia.

Elizabeth Sager Sharp, of New Haven, Conn., B. S. in Nurs. University of Michigan, 1956; M. S. in Nurs. Yale University, 1959; M. P. H. The Johns Hopkins University, 1963. Public Health Administration.

A Study of Nursing Care to Indigent Families.

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DOCTORS OF PHILOSOPHY

in The School of Hygiene and Public Health

with titles of dissertations

Sam Christopher Barranco, III, of Beaumont, Texas, B. S. Agricultural and Mechanical College of Texas, 1960; M. S., 1962. Radiological Science.

Marrow Cell Changes After Deposition of Ca 45 in the Bone.

Charles Curtis Childress, of Bel Air, Md., B. S. College of Great Falls, 1961; M. S. Kansas State College of Pittsburg, 1964. Pathobiology.

A Study of the Regulation of Glycogen Metabolism in Insect Flight Muscle.

Joseph Albert Fontana, of Detroit, Mich., B. S. Wayne State University, 1964. Biochemistry.

A Mutant of E. coli B Displaying Insensitivity to Glucose Repression.

Thongbliew Prempree, of Petch Buri, Thailand, M. D. University of Medical Sciences, Thailand, 1958. Radiological Science.

Chromosomal Repair Time of X-Ray Induced Breaks in Human Cells.

Robert Bruce Taylor, of Baltimore, Md., B. A. Kalamazoo College, 1963. Biochemistry.

Studies on Lincomycin Inhibition of Protein Synthesis in Cell-Free Extracts from Streptococcus faccalis and Escherichia coli.

Roger Vander Zwaag, of Holland, Mich., A. B. Hope College, 1960; M. S. Purdue University, 1962. Biostatistics.

A Stochastic Process Model for Estimating the Dependence of the Probability of a Disease on Several Regressors.

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MASTERS OF ARTS

in The School of Advanced International Studies

Charles Russell Allegrone, of Greensboro, N. C., B. A. The Johns Hopkins University, 1968.

Gregory William Altschuh, of St. Louis, Mo., B. A. The Johns Hopkins University, 1968.

David Clarke Atwood, of Greensboro, N. C., B. A. University of North Carolina, 1967.

William Franklin Averyt, Jr., of Mobile, Ala., B. A. University of Alabama, 1966; Diploma University of Strasbourg, 1967.

John W. Bacon, of San Mateo, Calif., B. A. Stanford University, 1967.

Anindya Kumar Bhattacharya, of Calcutta, India, B. A. Calcutta University, 1964; B. A. Cambridge University, 1967.

Nancy Birdsall, of Upper Montclair, N. J., B. A. Newton College of the Sacred Heart, 1967.

Ronald Mitchell Bitzer, of Bridgeton, N. J., B. A. The Johns Hopkins University, 1968.

Peter Conrad Bloch, of Lexington, Mass., B. A. Harvard College, 1967.

Fernando Cabezas, of Vina del Mar, Chile, License Catholic University of Valparaiso, 1961; M. C. L. Southern Methodist University, 1963.

Sharon Lee Camp, of Indian Head, Md., B. A. Pomona College, 1965.

Federico Canuto, of Genoa, Italy, Laurea in Law University of Genoa, 1967.

Warren Clark, Jr., of Washington, D. C., B. A. Williams College, 1958.

Arnold J. Conrad, Jr., of Des Moines, Iowa, B. S. F. S. Georgetown University, 1966.

Jacques Cook, of Washington, D. C., B. A. Amherst College, 1967.

Warren J. Devalier, of New Orleans, La., B. A. Louisiana State University, 1967.

Gerald Myron Feldman, of Baltimore, Md., B. A. The Johns Hopkins University, 1967.

Daniel C. Frey, of Hillcrest Heights, Md., B. A. The Johns Hopkins University, 1968.

Allan Jacques Graf, of Tappan, N. Y., B. A. The Johns Hopkins University, 1969.

Enzo Romano Grilli, of Genoa, Italy, Degree in Law University of Genoa, 1966.

Keith A. Hansen, of Los Altos Hills, Calif., B. A. Stanford University, 1967.

Patrick H. Harper, of Paris, France, Diploma Institut d'Etude Politique, 1964.

Kurt Otto Hengl, of Vienna, Austria, Dr. Jur. University of Vienna, 1967.

Nicholas Everett Hollis, of Chicago, Ill., B. A. DePauw University, 1966.

Richard Butler Hopper, of Shaker Heights, Ohio, B. A. Brigham Young University, 1967.

James Kade Huey, of Abilene, Texas, B. A. Stanford University, 1967.

John David Isaacs, of White Plains, N. Y., B. A. Dartmouth College, 1967.

Sarah Jackson, of Dover, Mass., B. A. Radcliffe College, 1965.

Eduardo Daniel Jimenez, of Mexico City, Mexico, B. A. University of Mexico, 1964.

Kevin John Kinsella, of Scarsdale, N. Y., B. S. Massachusetts Institute of Technology, 1967.

Jacqueline Lafon, of Bordeaux, France, License es Lettres University of Bordeaux, 1965, Diplome d'Etudes Superieures, University of Bordeaux, 1966.

Fernand Lemaire, of Talcy, France, Diploma Institut d'Etude Politique, 1967.

Robert Leonardi, of Stockton, Calif., B. A. University of California, Berkeley, 1967.

Linda Ann Lessner, of Prarie Village, Kan., B. A. Mills College, 1962.

Karin M. Lissakers, of Mansfield, Ohio, B. A. The Ohio State University, 1967.

Dominic Thomas Longo, Jr., of Boston, Mass., B. A. Harvard College, 1963.

Alfonso Lopez, of Elizabeth, N. J., B. A. Rutgers University, 1967.

Paul Eric Mason, of Larchmont, N. Y., B. A. Yale University, 1967.

Joseph McBride, of Melrose, Mass., B. A. Brandeis University, 1967.

Gerald P. McMahon, of San Francisco, Calif., B. A. San Francisco State College, 1967.

Virginia Metz, of Madison, Wisc., B. S. Iowa State University, 1967.

Patrick F. Morris, of Anaconda, Mont., B. S. Georgetown University, 1948.

Shoichiro Odagaki, of Tokyo, Japan, B. A. Kyoto University, 1960.

Frank J. Piason, of Winslow, N. J., B. A. Syracuse University, 1967.

Jane Gallagher Pisano, of Washington, D. C., B. A. Stanford University, 1966.

Stephen Tyler Putnam, of Wilmington, Dela., B. A. The Johns Hopkins University, 1968.

Jacob Nii-Ayi Quaye, of Accra, Ghana, B. A. Macalester College, 1967.

Clifford Fredic Ransom II, of Washington, D. C., A. B. Princeton University, 1967.

Erik Martin Rasmussen, of Winnetka, Ill., B. A. Grinnell College, 1967.

William A. Reinsch, of Wilmette, Ill., B. A. The Johns Hopkins University, 1968.

Silvia Richiello, of Rome, Italy, Laurea in Law University of Rome, 1964.

Theodore H. Schell, of Newton Centre, Mass., B. A. The Johns Hopkins University, 1966.

Gerald Wesley Scott, of Duncan, Okla., B. S. F. S. Georgetown University, 1962.

Alexander Wessel Shapleigh III, of St. Louis, Mo., B. A. Yale University, 1966.

Drury Ridgway Sherrod III, of Dallas, Texas, B. A. Southern Methodist University, 1965.

Philip J. Siffing, of Bartlesville, Okla., B. A. Washington and Lee University, 1965.

Leon Michael Stephen Slawecki, of Washington, D. C., B. S. F. S. Georgetown University, 1961.

Eric H. Smith, of Washington, D. C., B. A. Stanford University, 1964; J. D. University of California, Berkeley, 1967.

Marcellus Scowcroft Snow, of Salt Lake City, Utah, B. A. University of Utah, 1965.

Keith J. Sours, of Newport Beach, Calif., B. A. University of California, Berkeley, 1967.

Arthur Kean Spears, of Kansas City, Mo., B. A. University of Kansas, 1965.

Susan Betty Steiner, of Roslyn Harbor, N. Y., B. A. University of Wisconsin, 1967.

Rita H. Storch, of Toms River, N. J., B. A. Syracuse University, 1966.

Christopher Eldon Stowell, of Broken Arrow, Okla., B. A. University of Michigan, 1965.

Stephen Howard Stull, of Riverside, Conn., B. A. Washington and Lee University, 1963.

Lazare Tannenbaum, of Metz, France, B. A. Brooklyn College, 1967.

Le Chi Thao, of Hue, Vietnam, License University of Saigon, 1964; Advanced Diploma of Public Law, 1965.

David Houghton Tomlin, of Corpus Christi, Texas, B. A. The Johns Hopkins University, 1968.

John Elting Treat, of Washington, D. C., A. B. Princeton University, 1967.

Jonathan Gillett Truslow, of Fairfield, Conn., B. A. Yale University, 1963.

Roxann A. Van Dusen, of Rochester, Vt., B. A. Wellesley College, 1967.

Mark Wainstock, of New York, N. Y., B. A. Hofstra University, 1966.

Gregory M. Whiteman, of Birmingham, Mich., A. B. Dartmouth College, 1967.

Irving Alexander Williamson, Jr., of St. Louis, Mo., B. A. Brown University, 1965.

Mark B. Winchester, of Oregon, Ohio, B. A. Bowling Green State University, 1962.

Robert Lewis Wood, Jr., of Rye, N. Y., B. A. Duke University, 1967.

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DOCTORS OF PHILOSOPHY

in The School of Advanced International Studies
with titles of dissertations

Lewis Brownstein, of New York, N. Y., B. A. City College of New York, 1960; M. A., 1964.

Mass Primary Education in Kenya: A Problem in Social and Political Development.

Mohamed El-Khawas, of Raleigh, N. C., B. A. University of Alexandria, 1959.

Voting Patterns of the Afro-Asian Group: Their Degree of Cohesion in the UN, 1955-1965.

P. Edward Haley, of Claremont, Calif., B. A. Stanford University, 1961; M. A., 1967.

The United States and Revolution: The Mexican Experience, 1910-1917.

Aaron S. Klieman, of Chicago, Ill., B. A. Roosevelt University, 1961; M. A. Columbia University, 1964.

Foundations of British Policy in the Arab World: The Cairo Conference of 1921.

Dieter Martin Mahncke, of Bonn, Germany, B. A. University of North Carolina, 1962; M. A. The Johns Hopkins School of Advanced International Studies, 1964.

Nuclear Participation: The Federal Republic of Germany and Nuclear Weapons, 1954-1966.

Charles R. Planck, of Buffalo, N. Y., B. A. Oberlin College, 1962; M. A. The Johns Hopkins School of Advanced International Studies, 1964.

Arms Control, Disarmament, and Security in Europe—An Analysis of the Negotiations, 1955-1965.

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DOCTORS OF MEDICINE

Newton Franklin Adkinson, Jr., of Forest City, N. C., A. B. University of North Carolina, 1965.

Frank Lloyd Annis, of Miami, Fla., B. A. The Johns Hopkins University, 1966.

David S. Bachman, of McConnelsville, Ohio, A. B. Harvard College, 1965.

Terrence Joseph Ball, of Longview, Wash., B. S. Washington State University, 1965.

Karl Edmund Becker, Jr., of Wichita, Kan., B. A. University of Kansas, 1965.

Richard Edward Bensinger, of Washington, D. C., B. A. The Johns Hopkins University, 1965.

Tully Talbot Blalock, Jr., of Atlanta, Ga., B. A. Vanderbilt University, 1965.

James Lee Bolen, of Valdosta, Ga., B. A. Emory University, 1965.

Hayden Grant Braine, of Windsor, Conn., A. B. Harvard College, 1965.

Bruce Gregory Brown, of Lemont, Ill., B. S. M.E. Massachusetts Institute of Technology, 1962.

Catherine Jean Callaway, of Maryville, Tenn., B. A. Vanderbilt University, 1965.

Lance Alix Chilton, of Orinda, Calif., B. A. The Johns Hopkins University, 1966.

James Carpinter Cobey, II, of Washington, D. C., A. B. Hamilton College, 1965.

Edward H. Conley, Jr., of Huntington Station, N. Y., B. A. The Johns Hopkins University, 1966.

Joseph Thomas Coyle, Jr., of Chicago, Ill., A. B. College of the Holy Cross, 1965.

Philip Cheney Craven, of Washington, D. C., A. B. Harvard College, 1965.

Thomas Edward Davis, of Seattle, Wash., B. A. The Johns Hopkins University, 1965.

Thomas Arnold Depner, of Medford, Oreg., B. S. University of Portland, 1965.

David Bruce Diamond, of Forest Hills, N. Y., A. B. Columbia College, 1965.

Karl Robert Eckhardt, of State College, Miss., A. B. Vanderbilt University, 1965.

Donald William Edlow, of Washington, D. C., B. A. Yale University, 1965.

Scott Lee Faulkner, of Pasadena, Md., A. B. Princeton University, 1965.

Adam Julius Fiedler, of Baltimore, Md., B. A. Washington and Lee University, 1965.

Stanley E. Fisher, of Huntington Woods, Mich., B. A. The Johns Hopkins University, 1966.

James Wilford Forster, of Akron, Ohio, B. A. The Johns Hopkins University, 1965.

Stephan Lance Forstot, of Lynbrook, N. Y., A. B. Princeton University, 1965.

Rudolph Michael Franklin, of Linden, N. J., B. A. The Johns Hopkins University, 1965.

Richard Harvey Glew, of Framingham, Mass., A. B. Harvard College, 1965.

Alan Ivan Green, of South Norwalk, Conn., A. B. Columbia College, 1965.

Harry Leon Greene, Jr., of Owasso, Okla., B. A. The Johns Hopkins University, 1966.

Alan J. Greenfield, of Highland Park, N. J., B. A. Rutgers University, 1965.

Frank Guerra, of New York, N. Y., B. A. The Johns Hopkins University, 1966.

Carl Philip Hallenborg, of Mahwah, N. J., B. S. Muhlenberg College, 1964.

Steven Douglas Herman, of Woodmere, N. Y., B. A. The Johns Hopkins University, 1966.

William Henry Hoch, of Takoma Park, Md., B. A. Ohio State University, 1965.

Geoffrey Maxim Hosta, of Athol Springs, N. Y., B. S. Georgetown University, 1964.

Thomas Spencer Inui, of Gerard, Ohio, B. A. Haverford College, 1965.

Lloyd Alan Jacobs, of Oxford, Ohio, B. A. Miami University of Ohio, 1965.

Jesse Jay Jenkins, III, of Fairmont, W. Va., B. A. West Virginia University, 1965.

Arthur Bernhardt Jenny, II, of Ridgewood, N. J., B. A. The Johns Hopkins University, 1965.

Shepard J. Kantor, of Flushing, N. Y., B. A. Colby College, 1965; B. M. S. Dartmouth Medical School, 1967.

Steven Kurt Kaufman, of Whitestone, N. Y., B. A. The Johns Hopkins University, 1966.

John Morgan Kellum, Jr., Thomaston, Ga., B. A. The Johns Hopkins University, 1966.

Thomas J. Kelly, Jr., of Pittsford, N. Y., B. A. The Johns Hopkins University, 1962; Ph. D., 1968.

Kenneth R. Kenyon, of Schenectady, N. Y., A. B. Harvard College, 1965.

Harvey Gordon Klein, of Boston, Mass., A. B. Harvard College, 1965.

Peter Zachary Konigsberg, of New York, N. Y., A. B. Columbia College, 1965.

Karl Jules Kramer, of Pikesville, Md., A. B. Cornell University, 1965.

James Rothman Krasno, of Los Angeles, Calif., B. A. Yale University, 1965.

James Michael Larkin, Jr., of Dumont, N. J., A. B. Lafayette College, 1965.

Anne Lucia Leddy, of Wyomissing, Pa., A. B. Cornell University, 1965.

Steven Phillip Lehrer, of Los Angeles, Calif., B. A. The Johns Hopkins University, 1966.

David Bedford Lerberg, of Moorhead, Minn., B. A. Concordia College, 1965.

Loren George Lipson, of Encino, Calif., B. A. University of California, Los Angeles, 1965.

Bennett I. Machanic, of Burlington, Vt., A. B. University of Vermont, 1965.

Travis A. Meredith, Jr., of Welch, W. Va., B. A. Yale University, 1964.

James Ray Merikangas, of Hyattsville, Md., B. S. Villanova University, 1960.

Miguel Miro-Quesada V., of Lima, Peru, Universidad Peruana "Cayetano Heredia," 1963-66.

Jed Lane Morris, of Houston, Texas, B. A. Rice University, 1965.

James Edward Muller, of Indianapolis, Ind., B. S. University of Notre Dame, 1965.

Lee Neidengard, of Palos Verdes Estates, Calif., B. S. California Institute of Technology, 1965.

Duncan Reese Neilson, Jr., of Milwaukie, Oreg., B. A. Reed College, 1965.

Michael Harold Newman, of Chico, Calif., B. A. University of California, Berkeley, 1965.

Leroy Monroe Parker, of Tulsa, Okla., A. B. Harvard College, 1965.

David John Pierson, of Corvallis, Oreg., B. A. Oregon State University, 1965.

Robert Peter Prins, of Seattle, Wash., A. B. University of Washington, 1965.

James Robert Reynolds, of Sioux Falls, S. D., B. A. Augustana College, 1965; B. S. (Med.) University of South Dakota School of Medicine, 1967.

Elliott Richelson, of Waltham, Mass., B. A. Brandeis University, 1965.

David Paul Richman, of Miami, Fla., A. B. Princeton University, 1965.

Kenneth B. Roberts, of Dearborn, Mich., B. A. Yale University, 1965.

William John Rogers, Jr., of Marion, Ala., A. B. Princeton University, 1965.

Howard Louis Rosenberg, of Dayton, Ohio, B. A. The Johns Hopkins University, 1966.

Henry Stewart Sabatier, Jr., of Atlanta, Ga., B. A. The Johns Hopkins University, 1966.

Peter Lindsay Salk, of La Jolla, Calif., A. B. Harvard College, 1965.

Rein Saral, of Ames, Iowa, B. A. Grinnell College, 1965.

Eitan Daniel Schwarz, of Plainfield, N. J., A. B. Cornell University, 1965.

Robert Charles Scott, of Eugene, Oreg., B. A. University of Oregon, 1965.

Samuel Lee Selinger, of Hackettstown, N. J., A. B. Princeton University, 1965.

John Holden Sheehan, of Chicago, Ill., B. A. Harvard College, 1965.

Sara Watt Smith, of Washington, D. C., B. A. University of Michigan, 1965.

Harrison Clark Spencer, Jr., of Abingdon, Va., B. A. Haverford College, 1965.

John Lawrence Sullivan, III, of Silver Spring, Md., A. B. Duke University, 1965.

David Marc Tan Creti, of Carroll, Iowa, A. B. University of Kansas, 1965; B. S., 1965.

John Stockman Tarr, Jr., of Denver, Colo., B. A. Colorado College, 1964.

Peter A. Tomasulo, of Miami, Fla., B. A. The Johns Hopkins University, 1965.

Jan S. Vangrov, of Dayton, Ohio, B. A. The Johns Hopkins University, 1965.

Robert Stephen Weinberg, of Whiting, Ind., B. A. The Johns Hopkins University, 1966.

Thomas Allen Woolsey, of Madison, Wis., B. S. University of Wisconsin, 1965.

David S. Zee, of Chicago, Ill., B. A. Northwestern University, 1965.

Jaime Zusman T., of Lima, Peru, B. S. Utica College, 1965.

Janis Eizens Zvargulis, of St. Albans, W. Va., B. S. Morris Harvey College, 1965.

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MASTER OF ARTS

in The School of Medicine

with title of essay

Howard Charles Bartner, of Bethesda, Md., B. F. A. Temple University, 1954; B. S., 1954. Art as Applied to Medicine.

Simulated Eye Models for Instruction in Indirect Ophthalmoscopy and Scleral Depression.

(1)

DOCTORS OF PHILOSOPHY

in The School of Medicine

with titles of dissertations

Jeanne Crawford Beck, of Mt. Pleasant, Pa., A. B. Wilson College, 1965. Physiological Chemistry.

The Characterization of a Mutant of Saccharomyces cerevisiae with Altered Oxidative Phosphorylation.

Chester Ray Burns, of Nashville, Tenn., B. A. Vanderbilt University, 1959; M. D., 1963. History of Medicine.

Medical Ethics in the United States Before the Civil War.

David Michael Capuzzi, of Philadelphia, Pa., B.S. St. Joseph's College, 1960; M.D. Jefferson Medical College, 1964. Physiological Chemistry.

The Biosynthesis of Lipids, Proteins, and Serum Low Density Lipoproteins in Isolated Rat Liver Cells.

Paul Stanley Lietman, of Baltimore, Md., A.B. Western Reserve University, 1955; M.D., 1959. Physiological Chemistry.

Mitochondrial Protein Synthesis: Amino Acid Activation and Transfer to Ribonucleic Acid.

Harry Donald Price, of Belington, W. Va., B.S. West Virginia University, 1964. Physiological Chemistry.

The Water Permeability of Lipid Bilayer Membranes.

Malka Greenberger Scher, of Baltimore, Md., B.A. Goucher College, 1963. Physiological Chemistry.

Studies on the Biosynthesis and Structure of *Micrococcus lysodeikticus* Mannan.

Susan Serota Taylor, of Laurel, Md., B.A. University of Wisconsin, 1964. Physiological Chemistry.

The Enzymatic Incorporation of β-Hydroxy Fatty Acids into a Phospholipid of *Escherichia coli.*

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MASTERS OF SCIENCE IN ENGINEERING

with titles of essays

Carmen Louisa Aubey, of Caracas, Venezuela, Civil Engineer Catholic University Andres Bello, 1963. Geography and Environmental Engineering.

A Study of Refuse Disposal by Using the Sanitary Landfill Method.

John Joseph Amoss, of Baltimore, Md., B.E.S. The Johns Hopkins University, 1963. Electrical Engineering.

Bishamber Nath Batra, of Punjab, India, B.Sc. University of Madras, 1961; Master of Technology Indian Institute of Technology, 1962. Chemical Engineering.

On Passage of Electric Current through Low Dielectric Constant Liquids.

John Charles Baummer, Jr., of Baltimore, Md., B.S. Loyola College, 1967. Geography and Environmental Engineering.

Removal of Ammonia from Aquarium Walter by Chlorination and Activated Carbon.

Lawrence Geoffrey Bergman, of New York, N.Y., B.S. Cornell University, 1965; M.E., 1966. Operations Research and Industrial Engineering.

Tien-Hu Chen, of Taiwan, Republic of China, B.S. Taiwan Provincial Chung-Hsing University, 1965. Mechanics.

A Survey of the Theories of Laminar Flame Stability.

John David Edell, of Philadelphia, Pa. B.S. in E.E. Drexel Institute of Technology, 1968. Electrical Engineering.

An Investigation into the Generation of Poisson Distributed Random Impulses by Scintillation Techniques.

Richard Michael Farrell, of Massapequa, N.Y., B.S. in E.E. Massachusetts Institute of Technology, 1967. Biomedical Engineering.

A Method for Automating the Acquisition and Analysis of Aperiodic Low Frequency Signals Generated by Human Neonates Exposed to Acoustic Stimuli.

Thomas Michael Fekete, of Baltimore, Md., B.Ch.E. Rensselaer Polytechnic Institute, 1966. Chemical Engineering.

Determination of Diffusion Coefficients in a Steady State Experiment.

Alfredo Gorrochotegui Acosta, of Caracas, Venezuela, Civil Engineer Catholic University Andres Bello, 1962. Geography and Environmental Engineering.

The Petroleum Industry and Water Pollution.

Stuart Alan Haus, of Rome, N.Y., B.S. Rensselaer Polytechnic Institute, 1966. Operations Research and Industrial Engineering.

James Ralph Janis, of Pittsburgh, Pa., B.S. in Chem. Eng. University of Pittsburgh, 1967. Geography and Environmental Engineering.

A Suggested Mechanism for Biologic Removal of Starch-Induced Turbidity in Papermill Whitewater.

Malcolm Robert Knapp, of Baltimore, Md., B.E.S. The Johns Hopkins University, 1965. Chemical Engineering.

The Effect of Viscous Heating on the Transition to Turbulence in Capillaries.

Daniel Joseph Ladd, of Baltimore, Md., B.E.S. The Johns Hopkins University, 1962. Biomedical Engineering.

The Specificity of Fatty Acid Utilization by the Lung.

Donato Riccardo Leone, of Danbury, Conn., B.S. in Ch.E. Massachusetts Institute of Technology, 1959. Chemical Engineering.

The Stability of Distributed Variable Systems with Chemical Reaction.

John Moyu Liu, of Hong Kong, B.C.C., B.S. St. Vincent College, 1966. Mechanics.

Some Optical Experiments in the Study of Acoustic Waves in Solids.

John Ridgely Clarke Maguire, of Ellicott City, Md., B. S. Yale University, 1966. Mechanics.

On the Dynamic Plasticity of Aluminum Polycrystals at Very High Temperatures.

Yves Maystre, of Geneva, Switzerland, Dipl. in Civil Engr. Swiss Federal Institute of Technology, Zurich, Switzerland. Geography and Environmental Engineering.

Sewage Charges for Industrial Waste Waters Treated in Municipal Sewage Plants.

Alastair Gleysteen Scott Morton, of Annapolis, Md., B. S. in Metallurgical Engineering Lehigh University, 1964. Mechanics.

A Technique for Evaluating Titanium Alloys by Melting, Processing, and Testing Miniature Ingots.

Robert Leonard Munson, of Los Angeles, Calif., B. S. and B. A. Oregon State University, 1967. Operations Research and Industrial Engineering.

Charles Sigmon Phillips, of Marietta, Ga., B. E. E. University of Florida, 1960. Electrical Engineering.

The Variance of the Empiric Distribution of Stationary Random Processes.

Bruce Alger Whitaker, of Morganton, N. C., B. S. in Applied Mathematics, North Carolina State University at Raleigh, 1967. Operations Research and Industrial Engineering.

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MASTERS OF ARTS IN TEACHING

Margaret Priscilla Alden, of Portland, Me., B. A. The George Washington University, 1968.

Richard Michael Baginski, of Chehalis, Wash., B. S. Seattle University, 1967.

Karen Anne Baker, of Coshocton, Ohio, A. B. Cornell University, 1967.

Erwin Roger Bartman, of Baltimore, Md., B. A. The Catholic University of America, 1967.

Helene Dorothy Dansker Bergman, of New York, N. Y., A. B. Cornell University, 1967.

Jeffrey Marshall Bowen, of Silver Spring, Md., B. A. Williams College, 1967.

Johnnella Elizabeth Butler, of Alexandria, Va., B. A. College of Our Lady of the Elms, 1968.

Mark Merritt Canfield, of Baltimore, Md., B. A. Denison University, 1965.

Herbert Lyon Carpenter III, of Babylon, N. Y., A. B. Princeton University, 1967.

Dennis Michael Churchill, of Monrovia, Calif., A. B. Stanford University, 1943; M. A. The University of British Columbia, 1954.

Gerald Peter Costanzo, of Milwaukie, Ore., A. B. Harvard College, 1967.

Catherine Marie Dix, of Chicago, Ill., B. A. Rosary College, 1968.

Frances Roslyn Duskes, of Flushing, N. Y., B. A. State University of New York at Stony Brook, 1967.

Patricia Anne Fiorito, of New Haven, Conn., B. A. Wellesley College, 1967.

Jeannie Josephine Floch, of Detroit, Mich., A. B. The University of Michigan, 1968.

Daniel Lee Foster, of Wilmington, Calif., B. A. California State College at Long Beach, 1967.

Robert Sharp Franklin, of Dalton, Mass., B. A. Amherst College, 1967.

William Strasser Franz, of Westbury, N. Y., B. A. Denison University, 1967.

Sylvia Marguerite Gillett, of Raleigh, N. C., A. B. Barnard College, 1966.

Karen Sue Giventer, of Albany, N. Y., A. B. Cornell University, 1967.

Elizabeth Stevenson Green, of Baltimore, Md., A. B. Smith College, 1964.

Regina Vera Grimes, of Ridgefield Park, N. J., A. B. Randolph-Macon Woman's College, 1968.

Francis Adrian Gunnip, of Wilmington, Del., B. S. Georgetown University, 1964.

Barbara Edith Nelson Gunzelman, of Newport, R. I., B. A. Pembroke College, 1963.

Cheryl Ann Strohl Hack, of Annapolis, Md., B. S. in Bacteriology Carnegie Institute of Technology, 1967.

Thomas Robert Harper, of Preston, Md., A. B. Princeton University, 1967.

Simon Henry Bingham Hewat, of Dublin, Ireland, B. A. University of Dublin, 1967.

Sandra Lee Hobbs, of Raleigh, N. C., B. A. Meredith College, 1967.

Esme Hochbaum, of Bayside, N. Y., B. A. Harpur College, 1968.

Raymond Alvin Hohl, of Williamsville, N. Y., B. A. Wittenberg University, 1968.

Christina Maria Hoshowsky, of Rochester, N. Y., B. A. Bethany College, 1966.

Vincent Conor Johnston, of Toney, Ala., B. A. University of Dublin, 1967.

James Terry Kidd, of Ashton, Idaho, B. S. Utah State University, 1967.

Ruth Marie Kolbjornsen, of Staten Island, N. Y., B. A. Luther College, 1968.

Susan Jean Lauf, of Danbury, Conn., A. B. Middlebury College, 1968.

Sarah Ann Lauritsen, of Grand Island, Nebr., A. B. Oberlin College, 1968.

Sarah Cooper Levin, of Baltimore, Md., B. A. University of Wisconsin, 1964.

Leslie Carol Laird Luebbers, of Cheyenne, Wyo., B. A. Wellesley College, 1967.

Joyce Evelyn Maples, of Knoxville, Tenn., B. A. The University of Tennessee, 1967.

Thomas David McWhinnie, of White Plains, N. Y., B. A. Illinois Wesleyan University, 1968.

Allen Karl Miller, of Watertown, N. Y., B. S. Union College, 1967.

Gerri Maude Newbauer, of Orange, N. J., B. A. New York University, 1968.

Katharine Louise Neyman, of Woodland Hills, Calif., B. A. Pomona College, 1968.

Gail Niggle, of Vermilion, Ohio, B. A. Bluffton College, 1967.

Dorothy Eleanor Perry, of Sacramento, Calif., B. A. University of California, Davis, 1967.

Barbara Anne Peterson, of Minneapolis, Minn., B. A. Carleton College, 1967.

Maginel Porter, of Dallas, Texas, A. B. The University of Michigan, 1968.

Kathryn Diane Reitz, of Leck Kill, Pa., B. S. Muhlenberg College, 1968.

Alice Fay Goodman Rosenberg, of Richmond, Va., A. B. Goucher College, 1967.

Alfred Sanders, of Brooklyn, N. Y., B. Sc. McGill University, 1965.

Zoe Matina Sarbanes, of Salisbury, Md., B. A. Wellesley College, 1966.

Susan Alice Schweickert, of Scarsdale, N. Y., A. B. Middlebury College, 1967.

Quintin Paul Seadler, C. F. X., of Louisville, Ky., B. A. The Catholic University of America, 1968.

Sharon Rae Seiler, of Hagerstown, Md., A. B. The University of Michigan, 1967.

Barbara Putney Smith, of Richmond, Va., A. B. Randolph-Macon Women's College, 1967.

John David Strebe, of Columbia, S. C., B. S. University of South Carolina, 1967.

Joseph Cornelius Sullivan, of Woodside, N. Y., B. A. Manhattan College, 1968.

Judith Ann Willis Topping, of Ruxton, Md., B. A. Wellesley College, 1967.

Melvin Edward Toussaint, Jr., of Bel Air, Md., B. A. The Johns Hopkins University, 1958; M. L. A., 1967.

Virginia Ruth VanHazinga, of Westminster, Mass., A. B. Mount Holyoke College, 1968.

Virginia Dorothy Wall, of Huntingdon Valley, Pa., B. S. Denison University, 1968.

Patricia Rose Ward, of Baltimore, Md., A. B. College of Notre Dame of Maryland, 1968.

Richard Simon Weg, of Brooklyn, N. Y., B. S. Brooklyn College, 1964.

Sharon Lee Weremiuk, of Detroit, Mich., B. S. The University of Michigan, 1964; A. M., 1968.

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MASTERS OF ARTS

with titles of essays

Harvey George Alexander III, of Baltimore, Md. Writing Seminars.

Gordian Knots, A Collection of Poems.

Yvonne Adele Amar, of Chicago, Ill., B. A. Loyola University, Chicago, Ill., 1967. English.

Cheryl Daria Belsky, of Fresh Meadows, N. Y., A. B. Barnard College, 1967; M. A. T. The Johns Hopkins University, 1968. Romance Languages.

William Closson Boicourt, of Amherst, Mass., B. A. Amherst College, 1966. Earth and Planetary Sciences.

A Numerical Model of the Salinity Distribution in Upper Chesapeake Bay.

Robert Fulkerson Boughner, of West Mifflin, Pa., A. B. Duke University, 1968. Classics.

William Alger Bowers II, of Los Altos, Calif., B. A. Claremont Men's College, 1967. Political Economy.

James Joseph Bowes, of Bronx, N. Y., B. A. Fordham University, 1959; M. A., 1962; S. T. B. Woodstock College, 1965; S. T. L., 1967. Classics.

Donald Vincent Bowie, of Rye Beach, N. H., B. A. Tufts University, 1967. Writing Seminars.

Red, White and Bluebloods, Short Stories and an Essay.

Barbara Louise Ericsson Boyce, of Lawrence, Kan., B. A. The University of Kansas, 1965. Romance Languages.

Bernard Gerard Bricks, of Toledo, Ohio, B. S. Memphis State University, 1963. Physics.

Peter George Broad, of Holden, Mass., B. A. Dartmouth College, 1966. Romance Languages.

Joseph Augustine Brown, S. J., of East St. Louis, Ill., B. A. St. Louis University, 1968. Writing Seminars.

journeysong, a cycle of poems.

Steven Michael Brown, of Arlington, Va., B. A. The Johns Hopkins University, 1966. Physics.

William Ted Brown, of Missoula, Mont., B. A. The Johns Hopkins University, 1967. Biophysics.

John Francis Byrnes, of Elizabeth, N. J., B. A. St. Peter's College, 1967. German.

Jeffrey Edwin Callahan, of Amherst, Mass., B. S. United States Naval Academy, 1965. Earth and Planetary Sciences.

A Survey of Theoretical Models of the Antarctic Circumpolar Current.

David Francis Carroll, of Baltimore, Md., B. A. College of the Holy Cross, 1966. Romance Languages.

Elizabeth Anne McNeely Chase, of Towson, Md., A. B. Duke University, 1956. Education.

Henry Lowe Chen, of Philadelphia, Pa., A. B. Harvard University, 1963. Biophysics.

Daryl Ngee Chinn, of El Cerrito, Calif., B. A. University of California, Santa Barbara, 1968. Writing Seminars.

Living with Some Time, A Collection of Poems.

Carlo Chiarenza, of East Rochester, N. Y., Romance Languages.

James Louis Christmann, of Yuma, Ariz., B. S. Arizona State University, 1968. Biology.

William Francis Cipolla, of Baltimore, Md., A. B. University of Pennsylvania, 1966. Romance Languages.

Roderick Albert Clifford, of Bras d'Or, N. S., Canada, B. A. Mount Allison University, 1960; B. of Music, 1961. History.

Rosanne Howard Coggeshall, of Hartsville, S. C., B. A. Hollins College, 1968. Writing Seminars.

Looking Out at Water, A Collection of Poems.

Benjamin Joseph Cohen, of Baltimore, Md., B. A. The Johns Hopkins University, 1966. Physics.

Rona Lee Cohen, of Melrose, Mass., A. B. Syracuse University, 1967. English.

Edward Marks Cook, Jr., of Needham, Mass., A. B. Harvard University, 1965. History.

Douglas Floyd Covey, of Baltimore, Md., B. S. Loyola College, 1967. Chemistry.

David Howard Davis, of Bethesda, Md., A. B. Cornell University, 1963. Political Science.

Algeria: Politics in a Revolutionary Context.

João Manuel do Rosário Pacheco de Figueiredo, of Houston, Texas, Diploma of Medicine Goa Medical School, 1965. Psychology.

William Henry Dennis, Jr., of Baltimore, Md., B. S. The Johns Hopkins University, 1967. Chemistry.

Maria Sylvia De Weer, of Baltimore, Md., Romance Languages.

Randall Paul Donaldson, of Covina, Calif., B. A. Pomona College, 1967. German.

Michael Joseph Egan, of Baltimore, Md., Writing Seminars.

The Oldest Gesture, A Collection of Poems.

Robert Carl Elliott, of Nutley, N. J., B. S. in Biol. Brown University, 1967. Biophysics.

Clifford Lamar Elmore, of Atlanta, Ga., B. A. Georgia State College, 1967. German.

Thomas Edward Everson, of Baltimore, Md., B. A. Pomona College, 1967. Philosophy.

Gerry Lynn Fairbrother, of Baltimore, Md., B. S. University of Maryland, 1965. Education.

Charles Tibbals Feazel, of Birmingham, Ala., B. A. Ohio Wesleyan University, 1967. Earth and Planetary Sciences.

Abie Allan Feintuch, of Downsview, Ont., Canada, Mathematics.

Evelyn Bless Fieberling, of Rochester, N. Y., A. B. Stanford University, 1966; M. A. Columbia University, 1967. English.

Thomas Gerard Finn, of Baltimore, Md., B. S. Manhattan College, 1966. Physics.

William Heer Ford, of Arlington, Mass., B. A. Principia College, 1952. Writing Seminars.

The Moon in Search of Herself, A Translation of *La Lune à la Récherche d'Elle-même* by Claudel.

William Reed Fry, of Bethlehem, Pa., B. A. Haverford College, 1966. Writing Seminars.

If You Want Its All Right, A Collection of Poems.

Robert Arthur Gilmour, of Burlingame, Calif., B. A. University of California, Davis, 1966. History.

Laura Suzanne Gordon, of Silver Spring, Md., B. A. University of Maryland, 1968. Writing Seminars.

Directions, A Collection of Poems.

Harriet Ella Krakow Greif, of Baltimore, Md., B. A. University of Maryland, 1948; M. L. A. The Johns Hopkins University, 1966. Romance Languages.

Charles Richard Guarnieri, of Norwalk, Conn., B. S. The Florida State University, 1966. Physics.

Kenneth Scott Gummerson, of Fairfax, Va., B. A. The Johns Hopkins University, 1968. Biology.

James Scott Hauger, of St. Augustine, Fla., B. S. Stetson University, 1967. Chemistry.

George Robert Himmer, Jr., of Lutherville, Md., B. A. The Johns Hopkins University, 1963. History.

Joseph Patrick Hobbs, of Savannah, Ga., B. A. Georgia Southern College, 1964. History.

Howard Steven Hock, of Forest Hills, N. Y., B. S. (E. E.) Polytechnic Institute of Brooklyn, 1962. Psychology.

Chandler Vincent Hottel, of Washington, D. C., B. A. Georgetown University, 1965. Writing Seminars.

Poems.

Dorian Brooks Huber, of Greenbelt, Md., A. B. Radcliffe College, 1962. History of Science.

Louis Pasteur and Molecular Dissymmetry: 1844-1857.

Albert Alexander Hyde III, of Norwich, Vt., B. A. Dartmouth College, 1965. Romance Languages.

Judith Andrea Jacobson, of Baltimore, Md., B. A. St. John's College, Maryland, 1965. Psychology.

Douglas Warner Jensen, of Elgin, Ill., B. S. Engr. Sc. Purdue University, 1960. Physics.

Michael Karnow, Jr., of Baltimore, Md., B. A. Bucknell University, 1964. Writing Seminars.

Nighty-Night, Inc., A Novel.

Victoria Eulalia Kirkham, of Ames, Iowa, B. A. Wellesley College, 1964; A. M. University of Illinois, 1967. Romance Languages.

Harvey Nathan Kranzler, of Baltimore, Md., B. A. The Johns Hopkins University, 1968. German.

Nicholas Joseph Krasutsky, of Brooklyn, N. Y., B. S. Polytechnic Institute of Brooklyn, 1965. Physics.

Henry Morris Krisch, of Baltimore, Md., A. B. University of Pennsylvania, 1967. Biophysics.

George Edwin Lauterbach, Jr., of Berwyn Heights, Md., B. S. University of Maryland, 1967. Chemistry.

Reed Gwillim Law, Jr., of Hamden, Conn., B. S. in Math. Massachusetts Institute of Technology, 1966. Mathematics.

John Norman Lee, of Schenectady, N. Y., B. S. Union College, 1966. Physics.

Joanne Leedom, of Dallas, Texas, B. A. Principia College, 1968. Writing Seminars.

Between Tomorrow, A Collection of Short Stories and Poems, a Play, and a Critical Essay.

Nidra Poller Levin, of Baltimore, Md., B. A. University of Wisconsin, 1956. Writing Seminars.

Sondrey Peynes, A Novel.

Martha Levinson, of Baltimore, Md., B. A. Towson State College (Md.), 1965. Romance Languages.

John Charles Linthicum, of Linthicum, Md., Writing Seminars.

Night Journey, A Collection of Poems.

Michael Rudolph Loken, of Le Sueur, Minn., B. A. St. Olaf College, 1967. Biology.

Alexander Henderson Lumpkin, of Rock Hill, S. C., B. A. The University of the South, 1965. Physics.

Troy Pickett Lumpkin, of Naples, Italy, B. A. The University of North Carolina, 1965. Writing Seminars.

Whatever Happens Next, Four Stories.

David Mandelbaum, of Bogota, Colombia, B. S. Fairleigh Dickinson University, 1966. Physics.

Leo Michael Joseph Manglaviti, of Scranton, Pa., B. A. Fordham University, 1967. English.

Dermot Flannan McAleese, of Dublin, Ireland, B. of Commerce National University of Ireland, 1962; M. of Economic Science, 1964. Political Economy.

John King McComb, of Dallas, Texas, B. A. Southern Methodist University, 1964; M. A., 1966. English.

Patricia Arleene Molen, of Walnut Creek, Calif., A. B. University of California, Berkeley, 1966. History.

Douglas Eaton Moore, of Lexington, Mass., B. S. University of Massachusetts, 1966. Earth and Planetary Sciences.

Construction of f/H Maps and Comparison of Measured Deep-Sea Motions with the f/H Map for the North Atlantic Ocean.

Kathryn Ann Pauly Morgan, of Sheboygan, Wis., B. A. Alverno College, 1965. Philosophy.

Joyce D. Morgenroth, of New York, N. Y., A. B. Cornell University, 1966. Romance Languages.

David Gates Morse, of Plainfield, N. J., B. A. The College of Wooster, 1967. Earth and Planetary Sciences.

Martin Myers, of Toronto, Ont., Canada, B. A. University of Toronto, 1951. Writing Seminars.

The Assignment, A Novel.

Jeanne Bell Nicholson, of Lanham, Md., B. A. University of Maryland, 1966. Political Science.

The Urban Agency Influence Game.

Bruce James O'Connor, of Lower Lake, Calif., B. A. University of California, Santa Barbara, 1967. Earth and Planetary Sciences.

Wadsworth Owen, of Old Lyme, Conn., B. S. University of Massachusetts, 1961. Earth and Planetary Sciences.

A Study of the Physical Hydrography of the Patuxent River and Its Estuary.

Walter Jay Pakter, of New York, N. Y., B. A. The City College of New York, 1965. History.

Edward C. Papenfuse, Jr., of Macedon, N. Y., B. A. The American University, 1965; M. A. University of Colorado, 1967. History.

Andrew Paul Paszek, of Maplewood, N. J., A. B. Rutgers University, 1966. Physics.

Phyllis Irene Patteson, of The Dalles, Ore., B. A. University of Oregon, 1966. Romance Languages.

Julio Cesar Paz Cafferata, of Lima, Peru, B. of Economical and Commercial Sciences National University of San Marcos of Lima, Peru, 1967. Political Economy.

Roland Latimer Penny, of Orlando, Fla., B. S. Rollins College, 1967. Physics.

Experiments Involving Recoiless Emission and Absorption of Gamma Rays.

Julia Eleanor Perkins, of Evanston, Ill., A. B. Cornell University, 1967. Writing Seminars.

Going East, Bound West, A Collection of Poems.

Herbert Leon Petri, of Hamilton, Ohio, B. A. Miami University, 1967. Psychology.

Albert Glasgow Phillips, of Washington, D. C., B. A. Washington and Lee University, 1966. Writing Seminars.

Down a Green Field, A Novel.

Richard David Quinn, of Middle River, Md., B. A. Dartmouth College, 1961; M. A. University of Wisconsin, 1965. Romance Languages.

Michael Ragussis, of Long Island City, N. Y., B. A. City College of New York, 1966. English.

Dean Reginald Rapp, of Harrisburg, Pa., A. B. Wheaton College, 1964; M. A. University of Pennsylvania, 1965. History.

Jakob Rauber, of Winterthur, Switzerland. Political Economy.

Leonidas Kyriakoulis Resvanis, of Athens, Greece, B. Sc. The University of Manchester, England, 1965; M. S. University of Cincinnati, 1967. Physics.

Jack Douglas Richardson, of Grand Valley, Ont., Canada, B. Com. University of Toronto, 1957. Political Economy.

Suzanne Elizabeth Berger Rioff, of Baltimore, Md., B. A. Northwestern University, 1966. Writing Seminars.

Small Repairs, A Collection of Poems and Short Stories.

Jo Ann Ooiman Robinson, of Baltimore, Md., A. B. Knox College, 1964. History.

Gary James Rottman, of Colorado Springs, Colo., A. B. Rockhurst College, 1966. Physics.

Barbara Gail Rowes, of Great Neck, N. Y., Writing Seminars.

Fugue Within a Pen, A Collection of Stories and Essays.

William David Rubinstein, of New York, N. Y., B. A. Swarthmore College, 1968. History.

Henry Page Craft and the Unionist Right 1903-22.

Richard Alan Ryerson, of Marshfield Hills, Mass., A. B. Harvard University, 1964; M. A. T., 1965.

Elma Louise Savage, of Sherwood Forest, Md., A. B. Sweet Briar College, 1968. Writing Seminars.

The Bronze Turtle, A Collection of Poems.

Diana Henrietta Brody Schoen, of New York, N. Y., A. B. Barnard College, 1966. Psychology.

Jerald Sydney Schwarz, of Orange, Conn., B. A. The Johns Hopkins University, 1968. Mathematics.

Alan Michael Sentkowski, of Topsfield, Mass., B. S. University of New Hampshire, 1968. Biology.

Joyce Anne Simpkins, of Sykesville, Md., A. B. Goucher College, 1967. German.

Gulamabas Gulamhusen Sivjee, of Zanzibar, Tanzania, B. Sc. University of London, 1963. Physics.

Ellen Slotoroff, of Margate, N. J., A. B. Barnard College, 1968. Classics.

Burgess Knowles Smith, of Rutland, Vt., B. A. Wesleyan University, 1965. History.

Cynthia Lilla Smith, of Deland, Fla., B. A. University of Florida, 1967. English.

Edward Doyle Smith, Jr., of Corvallis, Ore., B. A. The Johns Hopkins University, 1966. History.

Robert Lipford Snyder, of Atlanta, Ga., B. S. in Applied Mathematics Georgia Institute of Technology, 1965. Mathematics.

Beverly Jean Sopp, of Baltimore, Md., A. B. College of Notre Dame of Maryland, 1968. Writing Seminars.

Rumors of Invading Winds, A Collection of Poems.

John Noble Stearns II, of Stevenson, Md., B. S. Columbia University, 1965. Classics.

Robert Paul Steeble, of Elkins Park, Pa., B. A. Yale University, 1966. Political Economy.

James Preston Stone, of Roanoke, Va., Chemistry.

Trudi Ann Stroup, of Hempstead, N. Y., B. A. Wellesley College, 1967. Classics.

Edward Willis Stuebing, of Cincinnati, Ohio, B. A. University of Cincinnati, 1965. Chemistry.

Hazel Scott McGee Tape, of Indianola, Miss., B. S. Tougaloo Southern Christian College, 1966. Biology.

Frank Michael Torti, of Northvale, N. J., Writing Seminars.

Castles of Rain, A Collection of Poems.

Randolph Earl Trumbach, of New Orleans, La., B. A. Louisiana State University, 1964. History.

Curtis Gus Unger, of Chattanooga, Tenn., B. S. State Teachers College, Jacksonville, Ala., 1958; B. A., 1961. Chemistry.

Robert Charles Vitz, of Lima, Ohio, B. S. Heidelberg College, 1967. Physics.

Design and Construction of a Sixteen Inch Autocollimation System.

Charlotte Marguerite Weber, of St. Paul, Minn., B. A. University of Minnesota, 1967. Political Science.

Maximum Feasible Participation and the War on Poverty.

Stephanie Helen Anthony Weber, of Ardsley, N. Y., A. B. Vassar College, 1967. Chemistry.

David Franklin White, Jr., of Upperco, Md., B. A. Richmond College, 1950; B. D. The Southern Baptist Theological Seminary, 1955. Philosophy.

Brooks Eliot Wigginton, of Wheeling, W. Va., A. B. Cornell University, 1965; M. A. T. Cornell University, 1966. Writing Seminars.

Keeping an Eye on the World, A Collection of Poems.

John William Wires, of Macon, Ga., B. A. Mercer University, 1966. Philosophy.

Frederick Edward Wood, Jr., of Baltimore, Md., B. A. Washington and Lee University, 1966. Political Science.

Leadership and Personal Interaction: The Case of Speaker Sam Rayburn.

John Kevin Woods, of Purchase, N. Y., Romance Languages.

William Crawford Woods, of Bethesda, Md., A. B. The George Washington University, 1966. Writing Seminars.

The Killing Zone: A Section of a Novel-in-Progress; and *Vanity's Sake*, a Short Story.

Charles Morgan Wormington III, of El Cajon, Calif., B. A. University of California, Santa Barbara, 1967. Biophysics.

May Yoh, of Kowloon, Hong Kong, B. A. University of Hong Kong, 1963; M. Sc. Econ. in Philosophy The London School of Economics and Political Science, 1965. Philosophy.

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DOCTORS OF PHILOSOPHY

with titles of dissertations

Ann Hersey Allison, of Lutherville, Md., A. B. Duke University, 1941; M. A. The Johns Hopkins University, 1965. History of Art.

The Statuettes of Pier Jacopo Alari Bonacolsi Called Antico.

John Louis Andronica, of Belmont, Mass., B. A. College of the Holy Cross, 1964; M. A. Boston College, 1966. Classics.

A Comparative Study of Ovid's Treatment of Erotic Themes in the Different Genres of his Poetry.

David Franklin Barbe, of Greenbelt, Md., B. S. E. E. West Virginia University, 1962; M. S. E. E., 1964. Electrical Engineering.

Bulk and Surface Conduction in Metal Free Phthalocyanine.

Anthony Albert Baum, of Madison, Wisc., B. A. The Johns Hopkins University, 1963. Chemistry.

Intramolecular Electronic Energy Transfer in a Series of Non-conjugated Enones.

Silvia Marta V. Bell, of Buenos Aires, Argentina, B. A. Queens College, 1964; M. A. The Johns Hopkins University, 1967. Psychology.

The Relationship between Infant-Mother Attachment and the Development of the Concept of Object Permanence.

Gerald Earl Bennington, of Rockville, Md., B. S. E. (E. E.), B. S. E. (Math.) The University of Michigan, 1963; M. S. E. The Johns Hopkins University, 1964. Operations Research and Industrial Engineering.

Multi-Commodity Disconnecting Sets in Undirected Graphs by Node Partitioning.

Mireille France Bertrand, of Seine et Oise, France, L. es Sc. University of Paris (Sorbonne), 1959; L. es Sc. Caen University, 1960; M. A. The Johns Hopkins University, 1967. Psychology.

The Behavioral Repertoire of the Stumptail Macaque, *Macaca speciosa*: A Descriptive and Comparative Study.

Herman Jay Blinchikoff, of Baltimore, Md., B. S. in Eng. The Johns Hopkins University, 1959; M. S. E., 1963. Electrical Engineering.

The Quasi-Stationary Response of Linear Time-Varying Systems to Modulated Signals.

Vincent Joseph Bowman, Jr., of Emporia, Kan., B. S. Stanford University, 1965. Operations Research and Industrial Engineering.

Improved Cuts in Linear Integer Programming.

Robert James Boye, of Baltimore, Md., B. S. University of Oklahoma, 1955. Physics.

The First Excited $^1\Sigma g^+$ State of the Hydrogen Molecule and Its Isotopes.

Bruce Gregory Brown, of Baltimore, Md., B. S. in Mech. Engr. Massachusetts Institute of Technology, 1962. Biomedical Engineering.

Cardiac Assistance By Intra-Aortic Balloon.

John Madison Brown, of Bethesda, Md., B. A. Yale University, 1956; M. A. The Johns Hopkins University, 1963. German.

Adam Krieger, Poet.

Katharine Burwell Lowe Brown, of Parkersburg, W. Va., B. A. Hollins College, 1962. History.

The Role of Presbyterian Dissent in Colonial and Revolutionary Virginia, 1740-1785.

Steven Jordon Brown, of Worcester, Mass., B. A. Clark University, 1966; M. A. The Johns Hopkins University, 1967. Classics.

The Sententiae of the Roman Elegists.

Joe Donald Burchfield, of DeKalb, Ill., B. S. Furman University, 1959; M. S. The University of North Carolina, 1963. History of Science.

Kelvin and the Age of the Earth.

Glenn Albert Cannon, of Baltimore, Md., B. S. Drexel Institute of Technology, 1963; M. A. The Johns Hopkins University, 1965. Earth and Planetary Sciences.

Observations of Motions at Intermediate and Large Scales in a Coastal Plain Estuary.

Robert Christopher Carroll, of Biddeford, Me., B. A. The Johns Hopkins University, 1964; M. A., 1968. Romance Languages.

Gerard de Nerval and the Literary Life: Metamorphosis and Transference in *Sylvie*.

Stephen John Carroll, of Chicago, Ill., B. S. in Bus. & Econ. Illinois Institute of Technology, 1962; M. S. in Bus. & Econ., 1964. Political Economy.

Optimal Production, Inventory and Capital Accumulation Policies for the Firm.

Arthur Beecher Chivvis, Jr., New Canaan, Conn., B. A. The Johns Hopkins University, 1964. Chemistry.

Spectral and Synthetic Studies in the Porphyrin Series.

Kevin Michael Clinton, of Dumont, N. J., A. B. Boston College, 1964. Classics.

Sacred Officials of the Eleusinian Mysteries.

Roger David Coleman, of Baltimore, Md., B. A. The Johns Hopkins University, 1964. Statistics.

Some Models for Interaction of Renewal Processes Related to Neuron Firing.

LindaLu Collins, of Morristown, N. J., A. B. Vassar College, 1965; M. A. The Johns Hopkins University, 1966. Classics.

Greek Slave Names.

Ruth Leah Schwartz Cowan, of New York, N. Y., A. B. Barnard College, 1961; M. A. University of California, Berkeley, 1964. History of Science.

Sir Francis Galton and the Study of Heredity in the Nineteenth Century.

Edward Peter Cunningham, of Laurel, Md., B. E. University College, Dublin, 1952; M. S. in E. E. University of Washington, 1962. Electrical Engineering.

Differential Games with Absolute Maximum Payoff.

Audrey Blyman Davis, of Baltimore, Md., B. S. in Educ. Adelphi College, 1956. History of Science.

The Circulation of the Blood and Medical Chemistry, 1650-1680.

Blaine Eugene Davis, of Middletown, N. J., B. S. University of Maine, 1964; M. S. E. The Johns Hopkins University, 1965. Operations Research and Industrial Engineering.

The Impact of Regulation on Capital Budgeting in Public Utilities as a Problem in Optimal Control.

Georgina Sabat de Guernica, of Santiago de Cuba, Cuba, Dipl. University of Oriente, Cuba, 1960; M. A. The Johns Hopkins University, 1967. Romance Languages.

El *Primero Sueño* de Sor Juana Inés de la Cruz: Traduciones Literarias y Originalidad.

Daniel Denegri, of Split, Yugoslavia, Graduate Physicist-Engineer University of Zagreb, 1964. Physics.

Coherent Production in K-d Interactions at 12.6 GeV/c.

William Joseph Dickinson, of Redwood City, Calif., A. B. University of California, Berkeley, 1963. Biology.

Developmental Genetics of Aldexhyde Oxidase in *Drosophila melanogaster.*

Andrew Miller Dietrich, Jr., of Westminster, Md., B. E. S. The Johns Hopkins University, 1964. Mechanics.

The Dynamics of Stored Energy in 1100 Aluminum, Tough Pitch Copper and 70-30 Brass.

E. William Dinkelacker, of Wheaton, Md., B. B. A. The City College of New York, 1959. Political Economy.

Models of Investment Behavior: An Econometric Critique.

Clark Stephen Donley, of Baltimore, Md., B. S. in E. E. Lehigh University, 1962. Biomedical Engineering.

Studies on the Frog Pineal Organ.

Gerald David Doppelt, of Newburgh, N. Y., B. A. Columbia University, 1962. Philosophy.

The Characterization of Phenomenalist Statements in Theories of Knowledge.

Charles Francis Doran, of Kilkenny, Minn., B. A. Harvard University, 1964; M. A. The Johns Hopkins University, School of Advanced International Studies, 1966. International Studies.

The Politics of Assimilation: A Comparative Study of the Integration of Defeated Hegemonic States into the International System.

Michael Louis Doria, of Cleveland, Ohio, B. S. in Eng. Sc. Case Institute of Technology, 1961. Mechanics.

Some General Results for Non-Reacting Binary Mixtures of Fluids.

James E. Dornan, Jr., of Baltimore, Md., B. A. Le Moyne College, 1959. Political Science.

The Founding Fathers, Security, and International Politics.

Sylvia Jutta Kraemer Doughty, of Chevy Chase, Md., A. B. Hollins College, 1965; M. A. The Johns Hopkins University, 1967. History.

The German Science of Politics in the American University, Civil War to World War I.

Ronald Lee Evans Drisko, of Bath, Me., B. S. Eastern Nazarene College, 1964; M. A. The Johns Hopkins University, 1966. Chemistry.

Studies on the Photodimerization of Acenaphthylene.

Mark William Dubin, of Englewood Cliffs, N. J., B. A. Amherst College, 1964. Biophysics.

The Innerplexiform Layer of the Retina: A Quantitative and Comparative Electron Microscopic Analysis in Several Vertebrates.

Thomas Dunne, of Tyldesley, England, B. A. University of Cambridge, 1964. Geography and Environmental Engineering.

The Production of Runoff in a Humid Area.

Lorence Wayne Feller, of Fredericksberg, Texas, B. S. Texas Lutheran College, 1964. Chemistry.

Part 1. Stereochemical Studies of Phenylbiphenyl-1-(8-methylnaphthyl)-carbonium Ion. An Example of Carbonium Ion Atropisomerism. Part II. The Resolution of Phenylbiphenyl-α-napthylmethyl Mercaptan.

Peter Graham Fish, of Belle Mead, N. J., A. B. Princeton University, 1960; M. A. The Johns Hopkins University, 1965. Political Science.

The Process of Federal Judicial Administration: A Study of Institutional Development and Administrative Power.

Jaroslav Thayer Folda III, of Baltimore, Md., A. B. Princeton University, 1962. History of Art.

The Manuscripts of William of Tyre.

Charles Henry Wheelwright Foster, of Needham, Mass., A. B. Harvard University, 1951; B. S. F. University of Michigan, 1953; M. of Wildlife Management, 1956. Geography and Environmental Engineering.

The Thread of the Stream: The New England River Basin Story.

Stephen Arnsdorff Fraser, of Rochester, N. Y., A. B. The University of Rochester, 1961; M. P. A. The University of Michigan, 1963. Political Science.

Citizens Participation in the Decision-Making of Federal Agencies, the Selective Service System, the Bureau of Land Management, the Office of Economic Opportunity and the Department of Housing and Urban Development.

Sherwood Charles Frey, Jr., of Falls Church, Va., A. B. University of California, Berkeley, 1964; M. S., 1965. Operations Research and Industrial Engineering.

Optimal Dynamic Investment in Transportation Networks.

Gerhard Kurt Friesen, of Toronto, Ont., Canada, B. A. Waterloo College, 1963; M. A. The Johns Hopkins University, 1964. German.

The German Panoramic Novel in the Nineteenth Century.

James Mitsuo Furukawa, of Honolulu, Hawaii, B. S. Sophia University, 1957; M. Ed. Loyola College, 1959; LL. B. University of Maryland, 1966. Education.

The Chunking Method of Determining Step Size in Programmed Instruction.

Robert Shaun Garfinkel, of New York, N. Y., B. A. Brooklyn College, 1960. Operations Research and Industrial Engineering.

Optimal Political Districting.

Dean Winston Gibson, of Baltimore, Md., B. A. Kenyon College, 1962. Biophysics.

Gold III Reaction with Nucleotides and Polynucleotides.

Claire Plunguian Gilbert, of Newark, Del., B. A. Rice University, 1960; M. A. University of Delaware, 1963. Romance Languages.

The Theme of the Double in the Works of Gérard de Nerval.

Dorothy F. Glass, of Pawtucket, R. I., A. B. Vassar College, 1964. History of Art.

The Influence of the Montecassino Pavement on Early Cosmatesque Work.

Thomas James Gleason, of Atlanta, Ga., B. A. The Johns Hopkins University, 1963. Physics.

A Mössbauer Effect Study of the Ferroelectric Transitions in Ferric Ammonium Sulfate Dodecahydrate and Potassium Ferrocyanide Trihydrate.

Andrew Elliott Godfrey, of Princeton, N. J., B. A. Franklin and Marshall College, 1964. Geography and Environmental Engineering.

Geologic History and Processes of Fan and Pediment Development in the Northern Henry Mountains Piedmont, Utah.

Charles Campbell Griffin, of Baltimore, Md., B. A. The Catholic University of America, 1960. Biology.

A Steady-State Model for Phosphofructokinase and Other Regulatory Enzymes.

Bernard Grossfeld, of Baltimore, Md., B. A. University of California, Los Angeles, 1959; M. A. University of California, Berkeley, 1963. Near Eastern Studies.

A Commentary on the Text of A New Palestinian Targum (Codex Neofiti I) on Genesis I-XXV.

Paul Mallory Haberland, of Milwaukee, Wisc., B. A. Haverford College, 1957; M. A. The Johns Hopkins University, 1960. German.

The Development of Comic Theory in Germany during the Eighteenth Century.

Donald Gene Hadley, of Jal, N. M., B. S. Eastern New Mexico University, 1959; M. S. University of Wisconsin, 1963. Earth and Planetary Sciences.

The Sedimentology of the Huronian Lorrain Formation, Ontario and Quebec, Canada.

William Harry Harader, of Fort Wayne, Ind., B. A. Wabash College, 1964; M. A. The Johns Hopkins University, 1966. Political Science.

The Committee on Veteran's Affairs: A Study of the Legislative Process and Milieu As They Pertain to Veteran's Legislation.

John William Halperin, of Chicago, Ill., A. B. Bowdoin College, 1963; M. A. University of New Hamphshire, 1966; M. A. The Johns Hopkins University, 1968. English.

The Language of Meditation: Four Studies in Nineteenth-Century Fiction.

James Edward Hart, of Gary, Ind., A. B. Harvard University, 1961. International Studies.

The Problem of Multilateralism in the Western Hemisphere.

Neil Duane Heiman, of Baltimore, Md., B. S. United States Naval Academy, 1959. Physics.

Nuclear Magnetic Resonance in the 100 Nanosecond State of Fe^{57} Following Selective Excitation of the Hyperfine Sublevels.

Albert Henins, of Baltimore, Md., B. A. Friends University, 1958. Physics.

Ruled Grating Measurement of the AlKα Wavelength.

Charles Barry Hogge, of Lutherville, Md., B. S. Virginia Polytechnic Institute, 1963. Electrical Engineering.

Quantitative Determination of Statistical Properties of Optical Fields by Pade Approximants.

Osamu Horie, of Tokyo, Japan, B. E. Tohoku University, 1960; M. E., 1962. Chemical Engineering.

High Temperature Kinetics of Bromine Atom Recombination.

Robert Bruce Horsfall, of Placentia, Calif., B. A. Reed College, 1964; M. A. The Johns Hopkins University, 1967. Psychology.

A Comparison of Two Cognitive Complexity Measures.

Nelson Nai-hsing Hsu, of Taiwan, Republic of China, B. S. in Eng. National Taiwan University, 1961. Mechanics.

Experimental Studies of Latent Work Hardening of Aluminum Single Crystals.

Robert Alexander Innes, of Upland, Calif., B. A. University of Connecticut, 1963; M. A. The Johns Hopkins University, 1965. Chemistry.

The Effect of Adsorption on the Reactions of Alkyl Radicals.

David Joseph Garnet Irwin, of Dublin, Ireland, B. A. Trinity College, Dublin University, 1959. Physics.

The Spectrum of Nd IV.

S. Frederick Johanson, of Evanston, Ill., B. A. Haverford College, 1965. Classics.

Dorian States in the Province of Achaea.

Paul Jerald Johnson, of Baltimore, Md., B. A. University of Chicago, 1961; M. A. The Johns Hopkins University, 1963. Philosophy.

Hobbes's Concept of Natural Law and Obligation.

Alexander Edwin Karu, of McLean, Va., B. E. S. The Johns Hopkins University, 1964. Biology.

Fractionation and Kinetic Studies of the Components of Photosynthetic Phosphorylation.

Stephan Andrew Khinoy, of New York, N. Y., A. B. Harvard University, 1963. English.

The Kingis Quair: an Edition.

John Francis Kielkopf, Jr., of Louisville, Ky., B. S. University of Louisville, 1966; M. S., 1966. Physics.

The Spectrum of Triply Ionized Gadolinium.

Marcia Jones King, of Timonium, Md., B. S. The Johns Hopkins University, 1960. Physics.

Covariant Spin Operators and the Kinematics of Helicity Amplitudes.

David K. Kirby, of Baton Rouge, La., B. A. Louisiana State University, 1966. English.

Some Implications of the Technique of Foreshortening in the Writings of Henry James.

Ronald Joseph Koch, of Cincinnati, Ohio, B. S. Xavier University, 1961. Physics.

Linear Polarization of X-Ray Bremsstrahlung as Observed from a Vapor Target X-Ray Tube.

Elaine H. Koppelman, of Sparks, Md., B. A. Brooklyn College, 1957; M. A. Yale University, 1959. History of Science.

French Influence on English Analysis in the Early Nineteenth Century.

William F. Krol, of Baltimore, Md., S. B. The University of Chicago, 1958; M. S. in Statistics, 1964. Statistics.

The Symmetric Multiple Comparisons Problem with Unequal Between-Treatments Variances.

Frank B. Kujawa, of Baltimore, Md., B. A. The Johns Hopkins University, 1964. Earth and Planetary Sciences.

A Geometric Analysis of Stable and Metastable Phase Equilibria in Unary and Binary Systems.

Eaton Edward Lattman, of New York, N. Y., A. B. Harvard University, 1962. Biophysics.

A Method of Orienting a Known Molecule Within a Crystal of Undetermined Structure.

Martin Daniel Levin, of Southfield, Mich., B. S. Wayne State University, 1964. Mathematics.

The Groups of Automorphisms of a Locally Compact Abelian Group.

David King Loughran, of Evanston, Ill., A. B. Dartmouth College, 1961; M. A. The Johns Hopkins University, 1967. Romance Languages.

The Anchored City: A Study of Existence and its Limits in the Poetry of Federico García Lorca.

Robert Allen Lowrey, of Clarksdale, Miss., B. A. University of Mississippi, 1958; M. A., 1963. Geography and Environmental Engineering.

Notes on the Analysis of Urban Space.

Stephen Hugh Lubore, of Rockville, Md., B. S. University of Maryland, 1957; M. S. The Johns Hopkins University, 1964. Operations Research and Industrial Engineering.

Extensions of the Tanker Scheduling Problem.

Anthony David Macro, of Baltimore, Md., B. A. University of Oxford, 1962; M. A., 1964. Classics.

Greek Treasures under Roman Rule.

Donald L. Magnetti, S. J., of West Englewood, N. J., A. B. Fordham University, 1963. Near Eastern Studies.

The Oath in the Old Testament in the Light of Related Terms and in the Legal and Convenantal Context of the Ancient Near East.

Alvin Maynard Malkinson, of Rye, N. Y., B. A. The University of Buffalo, 1962. Biology.

The Effect of N-Ethylmaleimide on the Tryptophan Synthetase α-Subunit of *Escherichia coli*.

William Gray Mankin, of Memphis, Tenn., B. S. Southwestern at Memphis, 1962. Physics.

Solar Limb Darkening in the Far Infrared and its Relation to the Temperature of the Chromosphere.

Michael Thomas Marron, of Baltimore, Md., B. S. University of Portland, 1964; M. A. The Johns Hopkins University, 1965. Chemistry.

Studies in Molecular Quantum Mechanics—Dissociation of Diatomic Molecules from the Viewpoint of the Integral Hellmann-Feynman Formula; Long Range Behavior of Hartree-Fock Orbitals; Solution of the Hartree-Fock Problem by Expansion onto Nested Bases; A Variation Principle for Energy Differences; Integral Virial Theorem and Generalized Differential Hellmann-Feynman Formula.

Eric Martz, of Bloomington, Ind., A. B. Oberlin College, 1963. Biology.

An Analysis of Contact Inhibition of Cell Division at the Individual Cell Level.

Maija Bajars May, of Princeton, N. J., B. A. Swarthmore College, 1961. Romance Languages.

D'Argental: A Magistrate in the Literary World.

Allan Carl Mazur, of Chicago, Ill., B. S. in Physics Illinois Institute of Technology, 1961; M. S. University of California, Los Angeles, 1964. Social Relations.

Resocialization of Ethnicity: A Study of Jewish Social Scientists.

Madeleine Guenser McDermott, of Paris, France, Lic. ès L. University of Paris, 1953; M. A. The Johns Hopkins University, 1965. Romance Languages.

Paul Morand, les Années de Formation et de Jeunesse.

Jeffrey Forrester McKelvy, of Akron, Ohio, B. S. The University of Akron, 1963. Biology.

Studies on Carbohydrate Group of *Aspergillus oryzae* α-Amylase.

Assefa Mehretu, of Addis Ababa, Ethiopia, B. A. Haile Sellassie University, 1964. Geography and Environmental Engineering.

Regional Integration for Economic Development of Greater East Africa.

Edward James Mendelson, of New York, N. Y., A. B. The University of Rochester, 1966. English.

Auden's Landscape.

Robert George Meyer, of Clayton, Mo., B. S. Valparaiso University, 1962. Biology.

Physical and Chemical Studies of a Mutant Tryptophan Synthetase from *Neurospora crassa*.

Ramesh Kumar Mittal, of Amritsar, India, B. S. E. Panjab University, 1965. Mechanics.

Biaxial Loading of Dead Annealed Commercial Purity Aluminum and the Generalization of the Parabolic Law.

Toshitsune Miyake, of Osaka, Japan, B. S. Osaka University, 1966. Mathematics.

Decomposition of Jacobian Varieties of Elliptic Modular Function Fields and Zeta Functions of Hasse Type Associated with Components.

Angela Bickel Moorjani, of Silver Spring, Md., B. A. University of Maryland, 1963. Romance Languages.

A Study of Samuel Beckett: The Inter Subjective Dimension of his Work.

John Caldwell Morrison, of Baltimore, Md., B. S. University of Santa Clara, 1963. Physics.

Group Theory, Mixed Atomic Configurations, and the Calculation of Relativistic Effects.

David Farnham Munro, of Lutherville, Md., B. A. The Johns Hopkins University, 1964; M. A., 1965. Chemistry.

A Crossed Beam Spectrometer for the Study of Ion-Molecule Reaction Dynamics.

Gerald Leonard Murison, of Johannesburg, South Africa, B. Sc. University of the Witwatersrand, 1961; M. Sc., 1963. Biology.

Regulation of Xanthine Dehydrogenase during Chicken Liver Development.

Peter John Murphy, of Brooklyn, N. Y., B. S. Webb Institute of Naval Architecture, 1962. Mechanics.

Vortex Streets at Low Strouhal Numbers.

Geoffrey Peter Murray, of Orrs Island, Me., B. A. Bowdoin College, 1961. Romance Languages.

The Protean Gardner: Voltaire's Literary Career 1755-1762.

Sydney Harold Nathans, of Houston, Texas, B. A. Rice University, 1962; M. A. The Johns Hopkins University, 1964. History.

Daniel Webster and the Whig Party, 1828-1844.

Stephen Lewis Nathanson, of Baltimore, Md., B. A. Swarthmore College, 1965. Philosophy.

Scepticism and Concept Possession.

Laszlo Szucs Nicolson, of Enid, Okla., B. A. Phillips University, 1963. Mathematics.

Boundary Value Problems for Systems of Ordinary Differential Equations.

Richey Asbury Novak, of Chambersburg, Pa., A. B. Columbia University, 1955; A. M., 1956. German.

Wilhelm von Humbolt as a Literary Critic.

Henry Lee Williamson Nuttle, of Hyattsville, Md., B. S. Dickinson College, 1961. Operations Research and Industrial Engineering.

A Quantitative Approach to Employment Planning.

Frank Victor Occhiogrosso, of Plainview, N. Y., B. A. St. John's University, New York, 1965; M. A. The Johns Hopkins University, 1967. English.

Sovereign and Subject in Caroline Tragedy.

Chet Brian Opal, of Baltimore, Md., B. A. The Johns Hopkins University, 1964. Physics.

Measurements of Nighttime 0_2 Densities in the Upper Atmosphere from Far-ultraviolet Absorption.

Eduardo Agustin Padlan, of Diliman, Q. C., Philippines, B. S. University of Philippines, 1960. Biophysics.

Crystallographic Studies on the Hemoglobin from the Marine Annelid, *Glycera dibranchiata.*

Lester Martin Partlow, of Baltimore, Md., B. A. The Johns Hopkins University, 1965. Biophysics.

Metabolic Effects of Nerve Growth Factor on Cultured Sympathetic Ganglia from Chick Embryos.

Anthony Martin Paul, of Shaker Heights, Ohio, A. B. Bowdoin College, 1963. Philosophy.

Figurative Language.

Catherine Scozzaro Pearson, of Trenton, N. J., A. B. Gettysburg College, 1964; M. A. Bryn Mawr College, 1966. Classics.

Aspects of Imagery in the Works of Ovid.

Giampiero Pecelli, of Trieste, Italy, B. A. Eastern Washington State College, 1964. Mathematics.

Dichotomies for Linear Functional-Differential Equations.

Susanna Nevin Peters, of Baltimore, Md., A. B. College of Notre Dame of Maryland, 1960; M. A. The Johns Hopkins University, 1967. Romance Languages.

The Quarrel of the *Adone.* A Chapter in the History of Seventeenth Century Italian Poetic Theory.

Herbert Morrow Phillips, Jr., of Princeton, N. J., B. A. Reed College, 1962. Biophysics.

Equilibrium Measurements of Embryonic Cells Adhesiveness; Physical Formulation and Testing of the Differential Adhesion Hypothesis.

Edward John Pluhowski, of Rockville, Md., B. C. E. The College of the City of New York, 1949; M. S. E. The Johns Hopkins University, 1965. Geography and Environmental Engineering.

Urbanization and Its Effect on the Temperature of Long Island Streams.

Iris Sandra Polinger, of Bronx, N. Y., A. B. Barnard College, 1964. Biology.

Histochemical Ultrastructural and Functional Properties of Embryonic Chick Heart Cells *in vivo* and *in vitro.*

Nelson Thomas Potter, Jr., of Mt. Morris, Ill., A. B. Monmouth College, 1961. Philosophy.

Maxims and the Application of the Categorical Imperative.

Israel Pressman, of Brooklyn, N. Y., B. S. Brooklyn College, 1958; M. S. New York University, 1964. Operations Research and Industrial Engineering.

Inventory Systems with Lost Sales.

Jean-Pierre Raynauld, of St-Calixte, Que., Canada, B. A. Joliette Seminary, 1956; B. Sc. University of Montreal, 1959; M. Sc., 1962. Biophysics.

Rod and Cone Responses of Ganglion Cells in Goldfish Retina: A Microelectrode Study.

Martin Carl Rechsteiner, of Billings, Mont., A. B. University of California, Berkeley, 1965. Biology.

Lactate Dehydrogenase and α-Glycerolphosphate Dehydrogenase in *Drosophilia melanogaster.*

Milan Rieder, of Praha, Czechoslovakia, Geology.

A Study of Natural and Synthetic Lithium-Iron Micas.

Edward David Rothman, of Montreal, Que., Canada, B. Sc. McGill University, 1965. Statistics.

Properties and Applications of Test Statistics Invariant Under Rotation of the Circle.

Jill Rubenstein, of Pittsburgh, Pa., A. B. University of Rochester, 1965; M. A. T. Harvard University, 1966; M. A. The Johns Hopkins University, 1968. English.

Scott's Historical Poetry.

Suellen Safir Rubin, of Baltimore, Md., A. B. Cornell University, 1965; M. S. Yale University, 1966; M. A. The Johns Hopkins University, 1968. Psychology.

An Investigation of Experimentally-based Measures of Conformity and Independence.

Frank Joseph Saul, of Hazleton, Pa., B. A. The Psnnsylvania State University, 1965; M. A. The Johns Hopkins University, 1968. English.

Autobiographical Surrogates in Henry James: The Aesthetics of Detachment.

Merry Carol Youle Schwartz, of Baltimore, Md., Biology.

Nucleic Acid Metabolism in Oocytes and Embryos of *Urechis caupo*.

Ronald Lee Schwiesow, of Boulder, Colo., B. S. Purdue University, 1962. Physics.

Energy Levels of Gd^{3+} in Six Hexagonal Crystals.

Jane Marie Ruble Scocca, of Baltimore, Md., B. S. Rollins College, 1963. Biology.

Composition and Structure of the Carbohydrate in Pineapple Stem Bromelain.

Stephen Michael Shapiro, of North Adams, Mass., B. S. Union College, 1963. Physics.

Light Scattering Studies of the Alpha-Beta Phase Transition in Quartz.

Thomas Frederick Sheppard, of Lincoln, Nebr., B. A. Vanderbilt University, 1957; M. A. University of Nebraska, 1962. History.

A Provincial Village in Eighteenth-Century France: Lourmarin, 1685-1800.

Larry Jay Shuman, of Silver Spring, Md., B. S. E. E. University of Cincinnati, 1965. Operations Research and Industrial Engineering.

Mathematical Models for Health Manpower Planning.

Alvin Arthur Siger, of Baltimore, Md., B. A. The Johns Hopkins University, 1957; M. A. 1957. Biophysics.

The Temperature Dependence of N-Phosphorylcreatine Utilization During Muscle Contraction.

Woollcott Keston Smith, of Lansing, Mich., B. S. Michigan State University, 1962; M. S., 1964. Statistics.

Two Stochastic Models in Molecular Biology.

Seymour Spilerman, of Los Angeles, Calif., B. A. Pomona College, 1959; M. A. Brandeis University, 1961. Interdepartmental Committee; Operations Research and Industrial Engineering and Social Relations.

The Distribution of Negro Males Among Industries in 1960.

Pauline Andria Springer, of Atlanta, Ga., B. A. Vanderbilt University, 1963; M. A. The Johns Hopkins University, 1966. Biology.

A Routine Assay for Bioelectric Activity in Tissue Cultures.

Thomas Herbert Stahel, S. J., of Greenwood, Miss., B. S. Georgetown University, 1959; M. A. Yale University, 1960; M. A. The Johns Hopkins University, 1966. English.

Christoforo Landino's Allegorization of the Aeneid: Books III and IV of the Camaldolese Dispensations.

Richard William Steele, of Rockville, Md., B. A. Queens College, 1956; M. A. The University of Wisconsin, 1958; M. A. The Johns Hopkins University, 1966. History.

Roosevelt, Marshall and the First Offensive: The Politics of Strategy Making, 1941-1942.

Alan Harding Strahler, of Orleans, Mass., B. A. The Johns Hopkins University, 1964. Geography and Environmental Engineering.

Forest Ecology of the Fairfax Line, Virginia and West Virginia.

Dennis George Sullivan, of Chicago, Ill., B. A. DePaul University, 1963. Romance Languages.

The Voyeur: The Hidden Spectator in *A la Recherche du Temps Perdu*.

David Charles Turner, of Wilton, Conn., B. S. Yale University, 1964. Biology.

Quantitative Estimation of Protein Binding Site Polarity. Fluorescence of N-Arylaminonaphthalenesulfonates.

Gary Franklin Vellek, of Wilmington, Del., B. A. University of Delaware, 1965. Classics.

The Priesthoods of Athens: 86 B. C.-267 A. D.

Marilyn Demorest Wang, of Hamden, Conn., A. B. Trinity College, Washington, D. C., 1965; M. A. The Johns Hopkins University, 1967. Psychology.

The Influence of Syntactic Structure on Comprehensibility and Recognition Memory.

Robert Tze-jen Wang, of Taiwan, Republic of China, B. S. Taiwan Provincial Cheng Kung University, 1962. Chemistry.

Further Studies of the Silver (1) Catalyzed Oxidation of Thallium (1) by Cerium (IV).

Richard Jack Wayne, of New York, N. Y., B. A. Brooklyn College, 1963. Romance Languages.

The Relationship of Tartuffe and Orgon in Molière's *Tartuffe*: the Problem Posed by Its Symmetry.

Henry Joseph Wehman, of Cincinnati, Ohio, B. S. Spring Hill College, 1963. Biology.

Fine Structure of the Developing Wing Imaginal Disk in Drosophila.

Jerome Arthur Weinstock, of Brooklyn, N. Y., A. B. Columbia University, 1965. Philosophy.

An Essay on Freedom of Action.

John Calhoun Wells, Jr., of Winter Haven, Fla., B. S. Florida State University, 1961. Physics.

Measurement of the Magnetic Moment of the Isotope B^{12}.

James Joseph Whalen, of Ellicott City, Md., B. E. E. Cornell University, 1958; M. S. E. The Johns Hopkins University, 1962. Electrical Engineering.

Mixing and Energy Relaxation in Indium Antimonide.

John Samuel Wickham, of Baltimore, Md., B. A. Pomona College, 1960. Earth and Planetary Sciences.

Structural Geology of the Western Slope of the Blue Ridge near Front Royal, Va.

William Blackburn Widhelm, of Baltimore, Md., B. E. S. The Johns Hopkins University, 1959; M. S. E., 1960; M. S., 1965. Operations Research and Industrial Engineering.

Linear Programming Search Procedures for Generalized Lagrange Multipliers.

Albert James Williams III, of Baltimore, Md., B. A. Swarthmore College, 1962. Physics.

High-Resolution Low-Energy Electron Scattering from Molecular Nitrogen.

George Stockton Wills, of Baltimore, Md., B. A. The Pennsylvania State University, 1958; M. A. The University of Virginia, 1962. Political Science.

The Reorganization of the Maryland General Assembly, 1966-1968: A Study of the Politics of Reform.

Bernard Witholt, of Longmeadow, Mass., B. A. Amherst College, 1964. Biology.

Polarization of Fluorescence: Instrumentation and Application to Protein Chemistry.

Donna Maria Yakel, of Baltimore, Md., A. B. Goucher College, 1964. Classics.

The Eponymous Heroes of the Cleisthenic Reform.

Anthony Ming-hung Yen, of Taipei, Taiwan, Free China, B. E. E. Taiwan Provincial Taipei Institute of Technology, 1960. Electrical Engineering.

Optimal Control Problem with State Variable Constraints—A New Derivation of the Necessary Conditions.

Po-lung Yu, of Taiwan, Republic of China, B. A. in Bus. Adm. National Taiwan University, 1963. Operations Research and Industrial Engineering.

Transition Surfaces in Differential Games.

William Jerome Ziobro, of Pittston, Pa., B. A. College of the Holy Cross, 1966. Classics.

The Staging of Sophoclean Tragedy.

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THE UNIVERSITY ODE

Truth guide our University
And from all error keep her free;
Let Wisdom yield her choicest treasure,
And Freedom reach her fullest measure;
Oh, let her watchword ever be
The truth of God will make you free,
Will make you free!

THE UNIVERSITY MOTTO

Veritas vos liberabit.

The truth shall make you free.

—St. John 8:32

THE JOHNS HOPKINS UNIVERSITY
Baltimore, Maryland 21218

Office of the Registrar June 16, 1969

For those who use the Commencement Program as an official record of the awarding of degrees, please note the following corrections in the 1969 Commencement Program.

Additions to Bachelors of Arts

1. Peter Michael Foley
2. Richard Lester Fox
3. James Joseph Lutz
4. Kent Nicholas Oliver
5. George Edward Schaefer
6. Kenneth Stephen Sherman

Deletions from Bachelors of Arts

1. David Ezra Brainerd III
2. Forrest Glen Chumley
3. Gregory Wayne Evans
4. Joseph John Valdrini

New Total 391

Addition to Bachelors of Engineering Science

1. Emmett G. Sanford

New Total 63